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GUIDE TO LEGISLATION AFFECTING MINING IN ONTARIO



Ontario

Ministry of
Natural
Resources

MINERAL POLICY BACKGROUND
PAPER No.9



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MINERAL POLICY BACKGROUND PAPER No.9



Study Prepared By

P.B. Hildebrand

L.J. Frosch

THE ENVIRONMENTAL APPLICATIONS GROUP LIMITED

For

MINERAL RESOURCES BRANCH
MINISTRY OF NATURAL RESOURCES

MAY, 1979



Ministry of
Natural
Resources

Hon. James A. C. Auld
Minister

Dr. J. K. Reynolds
Deputy Minister

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NOTE: This background discussion paper does not represent official policy and the views expressed herein are not necessarily those of the Government of Ontario.

May, 1979

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5. LICENSING SUMMARY

1. INTRODUCTION

1. INTRODUCTION

This publication is the work of The Environmental Applications Group Limited and was commissioned by the Mineral Resources Branch of the Ontario Ministry of Natural Resources. It gives the results of a preliminary study which consisted essentially of a review of federal and provincial statutes, regulations and guidelines relevant to mineral development in Ontario.

In view of the fact that a reading of statutes, regulations and guidelines is not alone always sufficient to give a clear picture of government operational procedures, contact was made with all relevant agencies in order to confirm, and where necessary modify statements in this document.

Although this report is considered an interim document, it is recognized that it is a potentially valuable guide for mining companies and government agencies. The document is presented in a modular form designed for maximum utility in determining governmental requirements in any particular set of circumstances.

The guide has been prepared to fulfill several specific objectives:

- to provide a single, readily available, information source presented in a concise form.
- to direct individuals faced with regulatory difficulties to the specific requirements.
- to provide a list of key individuals in government agencies to be contacted for specific requirements.
- to enable licensing and similar requirements to be keyed to mine development phases or actions.
- to indicate the significance of these requirements to mine development scheduling.
- to present an overview of impending changes in mine related legislation.

- to separate requirements which are of general applicability to mining from those specifically related to particular mining methods or types.

Every reasonable attempt has been made to ensure the accuracy of statements in this document. However, the licensing process is very complex and the interpretation of statutory and other requirements is highly dependent on specific details of each project. The reader is cautioned that this document is a guide only and that reference must be made to the complete statutes and regulations. In addition close co-ordination with the relevant government agencies should be maintained.

Since legislation and personnel change with the passage of time, a compromise must be made in this type of publication between achievement of the maximum in accuracy and clarity on the one hand and, on the other, provision of the information to the user before it becomes significantly out-dated. It would be very much appreciated if specialists in particular areas who note possible improvements in this publication would forward their suggestions to:

Supervisor, Metallic Minerals Section,
Mineral Resources Branch,
Ministry of Natural Resources,
Room 4625, Whitney Block,
Queen's Park, Toronto M7A 1W3

These suggestions will be taken into account in any future editions that may be authorized. Names of persons wishing to be kept informed of future amendments and of revised editions will be added to the mailing list on request.

To:

Supervisor, Metallic Minerals Section,
Mineral Resources Branch,
Ministry of Natural Resources,
Room 4625, Whitney Block,
Queen's Park, Toronto M7A 1W3

Please place my name upon your mailing list to be kept
informed of any future amendments or revised editions of
the publication entitled:

"Guide to Legislation Affecting Mining in Ontario".

Name:

Title:

Organization:

Address:

Signature

2. KEY AGENCY CONTACTS

2.1 PROVINCIAL

MINISTRY OF AGRICULTURE AND FOOD

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. William G. Newman	1200 Bay Street 12th Floor Toronto, Ontario M7A 1A3	(416) 965-1041
Deputy Minister K.E. Lantz	1200 Bay Street 12th Floor Toronto, Ontario M7A 1A3	(416) 965-1044
Production and Rural Development Division, Food Land Development Branch, Drainage Co-ordinator, John Johnston	1200 Bay Street 2nd Floor Toronto, Ontario M7A 1B1	(416) 965-9921

MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. Frank Drea	555 Yonge Street 9th Floor Toronto, Ontario M7A 2H6	(416) 963-3011
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Technical Standards Division, Energy Safety Branch, Director - H.T. Jones	400 University Avenue 24th Floor Toronto, Ontario M7A 2J9	(416) 965-4313
Energy Safety Branch, Training, Certification, William N. Drake	400 University Avenue 24th Floor Toronto, Ontario M7A 2J1	(416) 965-0418
Ontario Securities Commission Prospectus Solicitors	10 Wellesley Street East 6th Floor Toronto, Ontario M7A 2H7	(416) 963-0236

MINISTRY OF CULTURE AND RECREATION

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. R.C. Baetz	77 Bloor Street West 6th Floor Toronto, Ontario M7A 2R9	(416) 965-8098
Deputy Minister Dr. D. Wright	77 Bloor Street West 6th Floor Toronto, Ontario M7A 2R9	(416) 965-8095
Heritage Conservation Division Executive Director S.A. Otto	77 Bloor Street West 7th Floor Toronto, Ontario M7A 2R9	(416) 965-2336

MINISTRY OF ENERGY

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. James Auld	56 Wellesley Street West 12th Floor Toronto, Ontario M7A 2B7	(416) 965-4286
Deputy Minister M. Rowan	56 Wellesley Street West 12th Floor Toronto, Ontario M7A 2B7	(416) 965-4565
Ontario Energy Board Board Secretary S.A.C. Thomas	14 Carlton Street 9th Floor Toronto, Ontario M5B 1J2	(416) 965-2851

MINISTRY OF THE ENVIRONMENT

<u>CONTACT</u>	<u>ADDRESS</u>	
Minister Hon. Harry Parrott	135 St. Clair Ave. West 14th Floor Toronto, Ontario M4V 1P5	(416) 965-1611
Deputy Minister G.W.S. Scott	135 St. Clair Ave. West 14th Floor Toronto, Ontario M4V 1P5	(416) 965-1995
Environmental Assessment and Planning Division, Assistant Deputy Minister	135 St. Clair Ave. West 14th Floor Toronto, Ontario M4V 1P5	(416) 965-5115
Environmental Approvals Branch Director - D.P. Caplice	135 St. Clair Ave. West 10th Floor Toronto, Ontario M4V 1P5	(416) 965-3980
Water Resources Branch Hydrology and Monitoring Chief Water Well Inspector W.A. McClenaghan	1 St. Clair Ave. West 4th Floor Toronto, Ontario M4V 1P5	(416) 965-2105

-----Regional Offices-----District Offices--

Northwestern Region Act. Reg. Director R.M. Gotts	Thunder Bay Regional Office 435 James St. S. P.O. Box 5000 Thunder Bay, Ontario P7E 6E3 (807) 475-1205	Thunder Bay, Kenora
Northeastern Region Regional Director C.E. McIntyre	Sudbury Regional Office 469 Bouchard St. Regency Mall Sudbury, Ontario P3E 2K8 (705) 522-8282	Sudbury, Timmins, Sault Ste. Marie, North Bay, Parry Sound
Southwestern Region Regional Director D.A. McTavish	London Regional Office 985 Adelaide St. S. London, Ontario N6E 1V3 (519) 681-3600	Windsor, Sarnia Owen Sound
West Central Region Regional Director C.J. Macfarlane	Hamilton Regional Office 140 Centennial Pkwy N. Stoney Creek, Ontario L8E 3H2 (416) 561-7410	Cambridge, Welland Simcoe
Central Region Regional Director P.G. Cockburn	150 Ferrand Drive Suite 700 Don Mills, Ontario M3C 3C3 (416) 424-3000	South Peel, Barrie Muskoka-Haliburton, Peterborough, Toronto, Halton-Peel
Southeastern Region Regional Director R.E. Moore	Kingston Regional Office 133 Dalton St. P.O. Box 820 Kingston, Ontario K7L 4X6 (613) 549-4000	Ottawa, Cornwall, Belleville

MINISTRY OF HEALTH

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. Dennis Timbrell	80 Grosvenor Street Hepburn Block 10th Floor Toronto, Ontario M7A 2C4	(416) 965-2421
Deputy Minister T. Campbell	80 Grosvenor Street Hepburn Block 10th Floor Toronto, Ontario M7A 2C4	(416) 965-2437
Community Health Division Community Health Protection Branch Northern Ontario Public Health Service Dr. W.J. Copeman	80 Grosvenor Street Hepburn Block 10th Floor Toronto, Ontario M7A 2C4	(416) 965-1170

MINISTRY OF HOUSING

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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MINISTRY OF INTERGOVERNMENTAL AFFAIRS

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. Thomas Wells	Frost Bldg. South 3rd Floor Queen's Park Toronto, Ontario M7A 1B8	(416) 965-3606
Deputy Minister Don Stevenson	Frost Bldg. South 3rd Floor Queen's Park Toronto, Ontario M7A 1B8	(416) 965-1020
Local Government Organization Branch Director	Frost Bldg. South 5th Floor Queen's Park Toronto, Ontario M7A 1B8	(416) 965-6934

MINISTRY OF LABOUR

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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Industrial Chest Disease Service Chief - Dr. J.J. Vingilis	50 Grosvenor Street Toronto, Ontario M5S 2V3	(416) 965-4075
Mining Health and Safety Branch Director - P.B. McCrodan	400 University Avenue 15th Floor Toronto, Ontario M7A 1T7	(416) 965-1328
<u>Mining Health and Safety Offices</u>		
1) Bancroft	Box 500 K0L 1C0	(613) 332-3940
2) Elliot Lake	10-A Brunswick Walk P5A 2A8	(705) 848-2885
3) Kingston	1055 Princess St., Suite 403 K7L 1H2	(613) 542-4994
4) Kirkland Lake	4 Government Rd. E. P2N 1A2	(705) 567-5241
5) London	353 Richmond Street N6A 3C2	(519) 672-0280
6) Richmond Hill	10720 Yonge Street L4G 3C9	(416) 884-6551
7) Thunder Bay	435 James St. S. P7E 6E3	(807) 475-1675
8) Timmins	60 Wilson Ave. P4N 2S7	(705) 267-1401
<u>The Workmen's Compensation Board</u>		
- Claims Division Executive Director W.R. Kerr	2 Bloor Street E. Toronto, Ontario M4W 3C3	(416) 965-8773
- Financial Division Executive Director R. Brewerton	2 Bloor Street E. Toronto, Ontario M4W 3C3	(416) 965-8660
- Director of Revenue R.D. Reilly	2 Bloor Street E. Toronto, Ontario M4W 3C3	(416) 965-8662

MINISTRY OF NATURAL RESOURCES

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. James Auld	Whitney Block 99 Wellesley St. W. 6th Floor Toronto, Ontario M7A 1W3	(416) 965-1301
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Mineral Resources Group, Mining Tax Assessment Section, Mine Assessor and Senior Mineral Tax Assessor, F. Hall	Whitney Block 4th Floor 99 Wellesley St. W. Toronto, Ontario M7A 1W3	(416) 965-1062
Information and Mineral Statistics Section, Supervisor, Gary Weatherston	Whitney Block 4th Floor 99 Wellesley St. W. Toronto, Ontario M7A 1W3	(416) 965-1016

MINISTRY OF NATURAL RESOURCES (CONT'D)

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-----Regional Directors-----District Offices--

Northwestern Region G.A. McCormack	808 Robertson Street Box 5160 Kenora, Ontario P9N 3X9 (807) 468-3111	Dryden, Fort Francis, Ignace, Kenora, Red Lake, Sioux Lookout
North Central Region R.A. Baxter	435 James St. S. P.O. Box 5000 Thunder Bay, Ontario P7C 5G6 (807) 475-1261	Atikokan, Geraldton Nipigon, Terrace Bay, Thunder Bay, White River
Northern Region J.R. Oatway	140 Fourth Avenue Box 3000 Cochrane, Ontario P0L 1C0 (705) 272-4287	Chapleau, Cochrane, Gogama, Hearst, Kapus- kasing, Kirkland Lake, Moosonee, Timmins
Northeastern Region D.J. Vance	174 Douglas St. W. Sudbury, Ontario P3E 1G1 (705) 673-1111	Blind River, Espanola, North Bay, Sault Ste. Marie, Sudbury, Temagami, Wawa
Algonquin Region K.K. Irizawa	Brendale Square Box 9000 Huntsville, Ontario P0A 1K0 (705) 789-9611	Algonquin Park Bancroft, Bracebridge, Minden, Parry Sound, Pembroke
Eastern Region T.W. Hueston	Provincial Govt. Bldg. Concession Road Kemptville, Ontario K0G 1J0 (613) 258-3413	Brockville, Cornwall, Lanark, Napanee, Ottawa, Tweed
Central Region R.M. Dixon	10670 Yonge Street Richmond Hill, Ontario L4C 3C9 (416) 884-9203	Cambridge, Lindsay, Maple, Huronia, Niagara
Southwestern Region N.D. Patrick	1106 Dearness Drive London, Ontario N6E 1N9 (519) 681-5350	Aylmer, Chatham, Owen Sound, Simcoe, Wingham

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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2.2 FEDERAL

ATOMIC ENERGY CONTROL BOARD

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.1</u>
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Safeguards and Nuclear Materials Branch Director - J.W. Beare	Martel Bldg. 270 Albert Street P.O. Box 1046 Ottawa, Ontario K1P 5G8	(613) 996-5634
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DEPARTMENT OF CONSUMER AND CORPORATE AFFAIRS

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DEPARTMENT OF ENERGY, MINES AND RESOURCES

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ENVIRONMENT CANADA

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Environment Protection Service Ontario Region Regional Director	135 St. Clair Ave. W. Toronto, Ontario M4V 1P5	(416) 996-6406
Canadian Wildlife Service Ontario Region Regional Director	Place Vincent Massey St. Joseph Blvd. Hull, Quebec K1A 0E7	(819) 997-2957
Inland Waters Directorate Water Planning and Management Branch Engineering Division Chief - John Bathurst	Place Vincent Massey St. Joseph Blvd. Hull, Quebec K1A 0E7	(819) 997-2315

EXPORT DEVELOPMENT CORPORATION

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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SECRETARY OF STATE FOR EXTERNAL AFFAIRS

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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DEPARTMENT OF FINANCE

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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International Trade and Finance Branch, International Finance Division Director	Place Bell Canada Ottawa, Ontario K1A 0G5	(613) 593-7150

DEPARTMENT OF INDIAN AND NORTHERN AFFAIRS

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DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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Office of Special Import Policy Export Controls Section Export Officer	235 Queen Street Ottawa, Ontario K1A 0H5	(613) 995-8356

FOREIGN INVESTMENT REVIEW AGENCY

Commissioner G. Howarth	240 Sparks Street Ottawa, Ontario K1A 0H5	(613) 995-9601
Deputy Commissioner J. Jack Pennier	240 Sparks Street Ottawa, Ontario K1A 0H5	(613) 995-9605
Resource Industries Division Director	240 Sparks Street Ottawa, Ontario K1A 0H5	(613) 995-9452

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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Deputy Minister B. Rawson	Jeanne Mance Bldg. Ottawa, Ontario K1A 1B4	(613) 996-8147
Environmental Health Directorate, Monitoring and Criteria Division, Chief - Dr. P. Toft	Environmental Health Centre Tunney's Pasture Ottawa, Ontario K1A 0L2	(613) 992-0891

DEPARTMENT OF REVENUE

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
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Deputy Minister J.P. Connell	Connaught Bldg. Mackenzie Avenue Ottawa, Ontario K1A 0L5	(613) 995-6139
Customs and Excise Commercial Entry Process Keith Macdonnell	Connaught Bldg. Mackenzie Avenue Ottawa, Ontario K1A 0L5	(613) 996-1489

TRANSPORT CANADA

<u>CONTACT</u>	<u>ADDRESS</u>	<u>TEL. NO.:</u>
Minister Hon. Otto E. Lang	Transport Canada Bldg. Place de Ville Ottawa, Ontario K1A 0N5	(613) 996-7501
Deputy Minister S. Cloutier	Transport Canada Bldg. Place de Ville Ottawa, Ontario K1A 0N5	(613) 992-5031
Canadian Air Transportation Administration Ontario Region Regional Administrator	4900 Yonge Street Suite 300 Willowdale, Ontario M2N 5N4	(416) 224-3120
Canadian Coast Guard Aids and Waterways Regional Manager R. Wentzell	1 Yonge Street 20th Floor Toronto, Ontario M5E 1E5	(416) 369-3057

3. PROVINCIAL STATUTES AND REQUIREMENTS

3. PROVINCIAL STATUTES AND REQUIREMENTS

All Provincial statutes have been perused to determine their relevancy to the licensing of mineral resource developments in Ontario. Those Acts directly affecting mine licensing were examined in detail generally using the office consolidation copy and are summarized in this chapter. Regulations and guidelines from these Acts, or normally used by relevant government agencies, are presented immediately following the statute summary.

Statutes which are directly applicable to mining as a business activity distinct from others are included while those of general applicability to business enterprises in Ontario are not presented. In certain cases statutes and regulations affecting all types of businesses are particularly applicable to mining and are identified in Section 3.1.

Specific requirements affecting mineral resource development have been classified on three major bases relating to timing, type and status and are identified by Ministry.

Timing

Timing will generally be one of four types:

1. Dependent on mine phase or action or should be considered at a particular point to ensure minimum delays at a later time
2. Independent of mine phase or action
3. Regular repetitive requirements which are independent of actions; these generally are to be met on a regular basis, monthly, annually, etc.
4. At times requested by the government

Type

Regardless of their timing such requirements are generally of two types:

1. Submissions: These require information or applications to be submitted. In many cases there is a government review time and subsequent issuing of a permit. However, frequently submissions are to be made and no response is anticipated.
2. Performance: These are levels of attainment that must or should be met. They may be necessary to retain a permit but may be distinct from the permit application.

Status

There are two basic levels into which requirements can be classified:

1. Regulation: These are requirements which must be met to adhere to the law. Regulations can be obtained directly from the statute or from regulations published subsequent to the statute.
2. Guidelines: These requirements do not legally require compliance. However, adherence to them is strongly encouraged by the regulatory agency.

The requirements presented in this chapter have been classified according to a specific mining phase. For licensing purposes five phases of mining activity are recognized.

Mine Phase

1. Prospecting: This includes the search for mineral occurrences, geochemical work, test pits and diamond drilling to shallow depths.
2. Exploration: This phase includes the determination of the extent of mineralization and includes detailed mapping, trenching, deeper diamond drilling, overburden stripping, drifts and diamond drilling below the surface.
3. Development: This phase includes engineering design, economic analyses, bulk sampling and opening of open pit or underground works.
4. Operation: This phase is the production of products.
5. Abandonment: This phase is the cessation of all operations, reclamation and abandonment of the project.

3.1 GENERALLY APPLICABLE STATUTES

<u>ACT</u>	<u>RELEVANCE</u>
Boilers and Pressure Vessels Act	All boilers and pressure vessels must be inspected and certified by an inspector. Such inspection must also be done on an annual basis.
Building Code Act	See O. Reg. 925/75 for regulations. Structures used directly for the extraction of ore from a mine are specifically exempt from this Act. However it would apply to any ancillary buildings occupying an area greater than 100 square feet.
The Business Corporations Act	See O. Reg. 78 for regulations. This Act regulates the provincial incorporation and practices of corporations in Ontario.
Construction Hoists Act	See O. Reg. 126 as amended by O. Reg. 125/72 for regulations. A construction hoist is defined to exclude hoists under the Mining Act but does apply to material and workmen's hoists during construction if used. The Act contains substantial requirements and approvals from the Ministry of Labour.
Construction Safety Act	See O. Reg. 419/73 for regulations. This Act is not applicable to projects covered under the Mining Act but could apply to ancillary developments such as roads, bridges etc. This Act will be repealed shortly.
The Corporations Act	See O. Reg. 134, 135, 136 as amended for regulations. This Act pertains to all corporations. Part IV pertains to shares in a mining company.
The Corporations Information Act	See O. Reg. 957/76 for regulations. The Act requires registration of corporations in Ontario, initial registration, information and subsequent notifications.

ACT

RELEVANCE

The Corporations
Tax Act

See O. Reg. 350/73 as amended for regulations. This Act legislates tax requirements for corporations in Ontario.

The Employment
Standards Act

See O. Reg. 803/75 as amended for regulations. This Act set standards for employment contracts including work hours, wages, overtime pay and public holidays. These are minimum requirements only.

The Labour Relations
Act

See O. Reg. 549 and 551 as amended for regulations. This Act regulates the procedures for establishing collective bargaining agents, negotiating collective agreements and arbitration.

The Pesticides Act

See O. Reg. 618/74 as amended for regulations. The Act prohibits a person from exterminating with pesticides in the environment without a licence or permit from the Ministry of the Environment.

The Topsoil
Prevention Act, 1977

Under this Act, any municipal by-laws on topsoil removal are not applicable to projects under The Mining Act or The Pits and Quarries Control Act.

3.2 MINISTRY OF AGRICULTURE AND FOOD

ACT : The Drainage Act

DATE : R.S.O. 1970,
Chap. 136,
1972, c.1,s.7;
1975,c.79.súp.;
1976,c.8.

AGENCY : Ministry of Agriculture
and Food

RELEVANCE : Minor Relevance -
Drainage Works

This Act is generally not particularly applicable to mining projects. The application of the Act is directed at ; works affecting two or more persons; those valued at less than \$7,500; and those constructed off the mining property or affecting agricultural land.

Drainage works include a drain constructed by any means, including the improving of a natural watercourse, and the works necessary to regulate the water table or water level within or on any lands public or private. It also includes the works necessary to regulate the level of the waters of a drain, reservoir, lake or pond; and includes a dam, embankment, wall, protective works or any combination thereof.

Under the Act, three classes of drainage works are defined:

- mutual agreement drains - those affecting two or more persons
- requisition drains - those valued at less than \$7,500
- petition drains - others

For requisition drains a request is to be filed with the local municipality for the appointment of an engineer to review and report.

For petition drains a request is to be filed with the local council. Based on conditions the local municipality, local conservation authority or Ministry of Natural Resources may request that an environmental appraisal be done.

For the purpose of improving a natural watercourse, a covered drainage work may be employed if it provides for the capacity of draining all naturally draining surface waters.

The engineer assigned to review and assess the drainage works shall determine the method of disposing of material removed for the construction or alteration of drainage works.

Except with the approval of the Ministry of the Environment, it is not permitted to discharge into any drainage work, material or substances other than unpolluted drainage water.

The Minister may prescribe the manner in which drainage works shall be initiated and carried out in a territory without municipal organization.

REQUIREMENTS

NAME : Requisition Drain
Approval

ACT : The Drainage Act

AGENCY : Local Municipality

MINE TYPES : All

MINE PHASE : Exploration, Development

NUMBER : MAF-1

KEY CONTACT :
Drainage Co-ordinator
John Johnson

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low-only in areas
with municipal government

CROSS REF. : MAF-2

Under Section 3 of this Act, in areas having municipal governments, application must be made for drainage works valued at less than \$7500. The applicant is to utilize Form 1 from O. Reg. 298/76.

REQUIREMENTS

NAME : Petition Drain
Approval

ACT : The Drainage Act

AGENCY : Local Municipality

MINE TYPES : All

MINE PHASE : Exploration, Development

NUMBER : MAF-2

KEY CONTACT :

Drainage Co-ordinator
John Johnson

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low-only in areas
with municipal government

CROSS REF. : MAF-1

For drains worth more than \$7500 in areas with municipal governments applications must be made for approval. The applicant is to utilize Form 3 from O. Reg. 298/76.

3.3 MINISTRY OF CONSUMER AND COMMERCIAL RELATIONS

ACT : The Gasoline Handling Act

DATE : R.S.O. 1970
Chap. 189
1971, c.50, s.43;
1972, c.1, s.41;
1973, c.115.

AGENCY : Ministry of Consumer and
Commercial Relations

RELEVANCE : Handling and Storage of
Volatile Fuels

This Act applies to all petroleum products with a flash point below 100°F designed for use in an internal combustion engine. Diesel fuel will normally not fall into this category.

All equipment for the handling and storage of gasoline must be approved by the Director of the Energy Branch at Ministry of Consumer and Commercial Relations.

No persons shall install, repair, service or remove equipment at a storage location unless he is engaged in the business of doing so and is registered as a contractor by the Director for these purposes.

Inspectors may be appointed and are authorized to enforce this Act.

The Lieutenant Governor in Council may make regulations under this Act pertaining to exemptions, licensing and forms, and record keeping.

REQUIREMENTS

NAME : Equipment Approval

NUMBER : MCC-1

ACT : The Gasoline Handling Act

KEY CONTACT :

Energy Safety Branch
Director: H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration,
Development

STATUS : Regulation

SIGNIFICANCE : Low if properly
designed

CROSS REF. : MCC-3

All equipment for the storage of gasoline or other fuel with a flash point less than 100⁰F must be approved by the Director. Approval is normally obtained by certification directly by the Canadian Standards Association or the Underwriters Laboratory of Canada with their approval being vetted by the Director of Energy Safety Branch.

REQUIREMENTS

NAME : Registration of Persons

NUMBER : MCC-2

ACT : The Gasoline Handling Act

KEY CONTACT :
Energy Safety Branch
Director: H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All (Development)

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. : MCC-3

Persons who install, repair, service or remove equipment from a storage area must be registered with the Director. Registration is accomplished by submission of the required certification, a \$20.00 annual fee and normally includes that the person be knowledgeable of the Gasoline Handling Code.

Note: Individuals who transport gasoline must be licensed to do so. The requirements for such handling are included in the Gasoline Handling Code.

REQUIREMENTS

NAME : Gasoline Handling Code

NUMBER : MCC-3

ACT : The Gasoline Handling Act

KEY CONTACT :

Energy Safety Branch
Director: H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Comprehensive Requirements must be adhered to

CROSS REF. :

Inspite of its title, these are Regulations which are enforceable under the Act.

This code regulates the design and operation of:

- vehicles and transportation
- above ground storage tanks
- underground storage tanks

As well it lays out requirements for:

- operating procedures
- fire and other safety precautions

ACT : The Energy Act, 1971

DATE : R.S.O. 1970
Chap. 148.
1971, c. 44, sup;
1972, c.1, s.40

AGENCY : Ministry of Consumer and
Commercial Relations

RELEVANCE : Regulates the Transportation
and Use of Hydrocarbons

The Deputy Minister may appoint inspectors for this Act, one of whom is designated as the Director. Where an inspector finds a contravention to the Act he may order it to be immediately rectified. Where a danger exists he may affix a tag to the equipment and forbid its use.

No person shall handle a hydrocarbon unless he is a holder of a licence for that purpose. No person shall carry on the business of installing, removing, repairing, altering or servicing any appliance (device that uses a hydrocarbon) unless he is registered for this purpose.

No person shall alter, purge, activate, install, repair, service or remove any appliance or equipment employed in the handling or use of a hydrocarbon unless he is the holder of a certificate for the purpose.

No person shall initially activate an appliance that is supplied by pipeline without giving notice in writing to the distributor. Where connected to a supply of hydrocarbon, an appliance shall not be initially activated until the distributor has inspected it for compliance with this Act.

No person shall activate a pipeline until it has been examined and accepted by a person with a certificate as a pipeline inspector.

The Lieutenant Governor in Council may make regulations under this Act concerning design, installation, sales of equipment as well as safety procedures, registration, licensing and fees or any other matter provided in the Act.

REQUIREMENTS

NAME : Pipeline Activation

NUMBER : MCC-4

ACT : Energy Act, 1971

KEY CONTACT :

Energy Safety Branch
Director: H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate-particul-
arly for off-site pipelines

CROSS REF. : MCC-8

No person shall activate a pipeline until it has been examined and accepted in accordance with the regulations. Examination and acceptance are to be by a certified pipeline inspector.

REQUIREMENTS

NAME : Installer's Certificate

NUMBER : MCC-5

ACT : Energy Act, 1971

KEY CONTACT :

Energy Safety Branch
Training Certification
W. N. Drake

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All (Exploration)

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

No person shall install, alter, purge, activate, repair, service or remove any appliance or any equipment employed in the handling or use of a hydrocarbon unless he is a holder of a certificate for the purpose.

REQUIREMENTS

NAME : Registration of Contractors	NUMBER : MCC - 6
ACT : Energy Act, 1971	KEY CONTACT : Energy Safety Branch Director - H.T. Jones
AGENCY : Ministry of Consumer and Commercial Relations	TIMING : Dependent
MINE TYPES : All	TYPE : Submission
MINE PHASE : All	STATUS : Regulation
	SIGNIFICANCE : Low - generally not applicable for mining companies
	CROSS REF. :

A person who carries on a business which includes installing, removing, repairing, altering or servicing any device which uses a hydrocarbon and includes all valves, fittings, controls and attached components must be registered for this purpose.

REQUIREMENTS

NAME : Handler's Licence

NUMBER : MCC - 7

ACT : Energy Act, 1971

KEY CONTACT :

Energy Safety Branch
Director - H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

Application must be made to obtain a handler's licence for any hydrocarbon. No person shall handle a hydrocarbon without such a licence.

REQUIREMENTS

NAME : Energy Act Regulations

NUMBER : MCC - 8

ACT : Energy Act, 1971

KEY CONTACT :

Energy Safety Branch
Director - H.T. Jones

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

Several regulations governing design, installation and operation of facilities are promulgated under The Energy Act, 1971.

These include regulations pertaining to:

- gas pipeline system
- gas utilization code
- use of appliances
- exemptions
- propoane storage, handling and utilization
- fuel oil code

ACT : The Securities Act

DATE : R.S.O. 1970,
Chap. 426
1971, c.31;
1972, c. 1, s.55;
1973, c.11

AGENCY : Ontario Securities Commission
Ministry of Consumer and
Commercial Relations

RELEVANCE : Regulates Trading in
Securities

A security includes any certificate of interest in a mining lease or claim.

Subject to the regulations, registration is not required in respect to trade in the following securities:

- (a) Securities of a prospecting syndicate where the prospecting syndicate agreement has been filed where the securities are not offered for sale to the public and are not sold to more than fifty persons or companies.
- (b) Securities issued by a mining company or a mining exploration company as consideration for mining claims where the vendor enters into a pooling agreement as the Director considers necessary.

Upon the filing of a prospecting syndicate agreement and the issuance of a receipt by the Director, the liability of the members of the syndicate is limited to the extent provided by the terms of the agreement:

- (a) Where the sole purpose of the syndicate is the financing of prospecting explorations, preliminary mining development or the acquisition of mining properties or any combination thereof.
- (b) Where the agreement clearly sets out factors such as purpose of syndicate, location of principal office, an annual statement of the receipts and disbursements is furnished annually to the Director and members plus others.
- (c) Where the capital does not exceed \$50,000.

Where an investigation is being carried out by the Commission, the Commission may notify the mining recorder that proceedings are being taken that may affect land or mining claims belonging to the person or company.

No person or company shall trade in a security where such a trade would be in the course of distribution to the public of such security until there have been filed, with the Commission, both a preliminary prospectus and a prospectus in respect to the offering.

Both the preliminary prospectus and the prospectus shall contain the required certificates and provide information as required under the Act.

In the case of a mining or industrial company that is in the promotional, exploratory or developmental stage the prospectus shall contain, amongst other requirements, financial statements of the source and application of funds or a statement of cash receipts and disbursements of the company and, unless the Director permits, all its subsidiaries for the last five completed financial years and any part of a subsequent financial year.

REQUIREMENTS

NAME : Prospectus - Mining
Exploration Company

ACT : Securities Act

AGENCY : Ministry of Consumer and
Commercial Relations
Ontario Securities Commission

MINE TYPES : All

MINE PHASE : Exploration

NUMBER : MCC - 9

KEY CONTACT :
Ontario Securities Commission
Prospectus Solicitor

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

A mining exploration company means a company so designated by the Director where:

- (a) the purpose is the exploration and development of its mining claims or properties presently owned or under option
- (b) the president and managing director have at least five years of practical experience in prospecting, mining exploration and development
- (c) all directors have reasonable mining exploration experience
- (d) the company has not previously engaged in distribution to the public
- (e) administrative expenses are as required in the regulations

The prospectus of a mining exploration company shall be prepared in accordance with Forms 16 and 17 in Revised Regulations of Ontario, R.R.O. 1970, Regulation 794.

REQUIREMENTS

NAME : Prospectus - Mining Company

NUMBER : MCC - 10

ACT : Securities Act

KEY CONTACT :
Ontario Securities Commission
Prospectus Solicitor

AGENCY : Ministry of Consumer and
Commercial Relations

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

A mining company shall submit a prospectus in accordance with Form 16 in the Revised Regulations of Ontario, R.R.O. 1970, Regulation 794.

3.4 MINISTRY OF CULTURE AND RECREATION

ACT : The Historical Parks Act

DATE: 1972, Chap. 6

AGENCY : Ministry of Culture and
Recreation

RELEVANCE : Restrictions on Mining
in Historical Parks

Subject to the regulations, prospecting and the staking out of mining claims or the development of mineral interests or the working of mines in historical parks is prohibited.

A licence of occupation may be issued under the regulations to the recorded holder of a lawfully staked mining claim in a historical park.

The staker or recorded holder of a mining claim or the holder of a licence of occupation issued to the recorded holder of a mining claim does not acquire any right, title or interest in or to the surface rights in the land.

Where it is necessary to interfere with the surface rights in any such land in order to carry on mining operations, the district manager or superintendent in charge of the historical park in which the land is may permit such interference with the surface rights as he considers necessary.

ACT : The Ontario Energy Board Act
(The Ontario Energy Board Amendment Act, 1975 (2nd session)
(The Ontario Energy Board Amendment Act, 1976.)
AGENCY : Ministry of Energy
Ontario Energy Board

DATE : R.S.O. 1970,
Chap. 312
1973, c. 55
1975 (2nd sess), c. 8
1976, c. 21.

RELEVANCE : Approval of Gas Pipelines

The Act sets out the terms of reference for the Ontario Energy Board which generally are not applicable to mining projects. However the Board is relevant for projects which involve construction of a gas or oil pipeline.

No person shall construct a transmission line (pipeline does not include power line) without obtaining Board approval.

Where an interested person objects to the proposed project a hearing is held after 30 days from the date of filing of the transmission line application. If unopposed the hearing will be scheduled after 14 days. No line may be constructed until the Board approves the proposal.

REQUIREMENTS

NAME : Pipeline Application

NUMBER : MEN - 1

ACT : Ontario Energy Board Act

KEY CONTACT :
Ontario Energy Board
Board Secretary - S.A.C.
Thomas

AGENCY : Ministry of Energy
Ontario Energy Board

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High for offsite
pipeline

CROSS REF. :

There are 3 types of pipelines identified under this Act;

- 1) production line - located within the confines of the mining property
- 2) distribution line - for the distribution of energy
- 3) transmission line - for transmitting energy from a source to a user through a series of distribution lines

An application to construct a transmission line requires an approval by the Ontario Energy Board (OEB). The application must show the location of the proposed line and the municipalities, highways, railways, utility line and navigable waters passed by the pipeline. A hearing before the OEB will result from this application.

It is recommended that the company contact the OEB for plans to construct a production or distribution line.

For the construction of a pipeline the guidebook..."For The Construction and Operation of Pipelines in the Province of Ontario" must be adhered to before approval is given.

The guidelines list the data to be filed with the Board, routing, construction, operation and maintenance procedures for the proposed pipeline.

3.6 MINISTRY OF THE ENVIRONMENT

ACT : The Environmental Assessment Act **DATE :** 1975, Chap. 69

AGENCY : Ministry of the Environment

RELEVANCE : Requirements for Designated
Projects

The Act currently does not generally apply to private sector projects and the only mining project designated under this Act is Onakawana Development Limited's proposed lignite strip mine in the James Bay Lowlands. The Act currently applies to projects undertaken by the provincial government and by municipalities, unless exempted. However on an indeterminate date in future the Act will apply to private projects.

The word "environment" is broadly defined to include air, land, water and socio economics.

Proponents of projects designated under this Act must submit an environmental assessment report to the Minister prior to proceeding with the undertaking. Ministerial approval of the report must be obtained as well as the approval to proceed with the undertaking before any licence, permit, approval, permission or consent shall be issued or granted by any regulatory Authority of the Province of Ontario.

The required content material of the assessment report is identified in Part II, Section 5 of the Act.

Either the Minister or a member of the public may request the Environmental Assessment Board to hold a hearing. Where the Board holds a hearing, all remaining decision matters concerning approvals are under the authority of the Board members. Where no hearing is held, acceptance of the environmental assessment is by the Minister of the Environment and approval to proceed is granted by the Minister, subject to the approval of the Cabinet.

An approval by the Minister pursuant to this Act does not preclude any proceeding in relation to a contravention of any provision of the Environmental Protection Act, 1971, The Ontario Water Resources Act or the regulations made under either of these Acts.

Where a proponent proposes any change in the undertaking of which approval has not been previously granted, this Act applies to that proposed change as though it were a separate undertaking in itself.

Where the Minister is of the opinion that it is in the public interest, having regard to the purpose of this Act and weighing the same against the injury, damage or interference that might be caused to any person or property by the application of this Act to any undertaking, the Minister, with the approval of the Lieutenant Governor in council or of such Ministers of the crown as the Lieutenant Governor in Council may designate, may by order exempt the undertaking or the proponent of the undertaking from the application of this Act or the regulations or alter or revoke any term or condition of an exemption.

There are no relevant regulations under this Act, but guidelines on the content of the Assessment Report, specific to each project, may be obtained from the Ministry.

REQUIREMENTS

NAME : Environmental Assessment	NUMBER : MOE - 1
ACT : Environmental Assessment Act	KEY CONTACT : Environmental Approvals Branch, Director-D.P. Caplice
AGENCY : Ministry of the Environment	TIMING : Dependent
MINE TYPES : All (where designated)	TYPE : Submission
MINE PHASE : Development	STATUS : Regulation (where designated as such)
	SIGNIFICANCE : High - work must begin as early as possible
	CROSS REF. :

Where a project is designated under the Act, the proponent cannot proceed with the undertaking until the environmental assessment has been accepted by the Minister and he has given his approval to proceed.

No licence, permit or approval required by any statute, regulation or bylaw can be issued (except in relation to feasibility studies) until the environmental assessment is accepted and Ministerial approval to proceed obtained.

To date no private sector project has been given approval to proceed under this Act and no mining environmental assessment has been submitted to MOE for acceptance. However, based upon past experience it is likely that at least 12 to 24 months of environmental study negotiations with MOE and preliminary design would be required for preparation of an acceptable environmental assessment document. During this period close communication would need to be maintained with MOE staff in the Environmental Approvals Branch.

The publication "General Guidelines for the Preparation of Environmental Assessments, July 1978" identifies the requirements and explains the terms of the Environmental Assessment Act. Included is a detailed discussion of the required content of the assessment

document as well as the review process involved under the act.

The Act sets out two major approval points:

(1) Acceptance, or amendment and acceptance, of the environmental assessment document. Acceptance is dependent on whether there is sufficient information in the document submitted to make a decision to approve or to reject the undertaking. Acceptance can be by the Minister or the Environmental Assessment Board.

(2) Approval or rejection. This decision point is reached after the document has been accepted. Approval is by the Minister with Cabinet concurrence or by the Environmental Assessment Board.

After submission of an environmental assessment, MOE staff will review the document and a decision will be made on whether or not to hold a hearing. From this point on, the process can follow a number of potential paths as indicated in the attached flow chart.

Hearings:

Either the Minister of the Environment or a member of the public may require the Environmental Assessment Board to hold a hearing.

No Hearing - Approval by the Minister, subject to Cabinet Approval.
Approval time estimated between 3 and 5 months.

Hearing - Environmental Assessment Board approves.
Approval time estimated between 8 and 10 months.

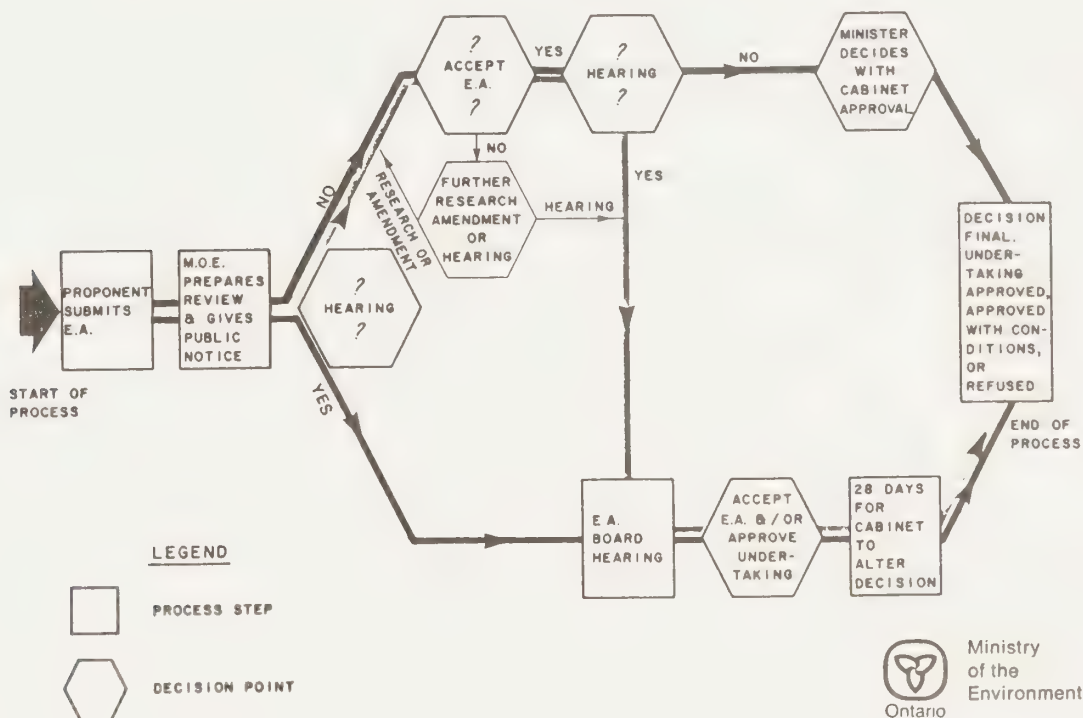
Approval to proceed must be obtained from either the Minister (where no hearing was required) or from the Environmental Assessment Board.

The approval is valid for time and conditions specified.

A decision by the Minister is final.

A decision by the Environment Assessment Board is final, unless within 28 days or a period stated by the Minister, the Cabinet varies the decision, substitutes a new decision, or requires a new hearing.

BASIC FLOW DIAGRAM OF THE ENVIRONMENTAL ASSESSMENT ACT 1975



JAN. 1977

ACT : The Environmental Protection Act, 1971. **DATE :**

1971, c.86;
1972, c. 1 s.69 and
c.106;
1973, c. 94;
1974 c.20 and c.125
1975, c. 70
1976, c. 49

AGENCY : Ministry of the Environment

RELEVANCE : Air, Land, Water, Noise

This Act prohibits discharge into the natural environment of any contaminant that will result in harm to any person, animal, plant or living thing, directly or as a result of inhalation or ingestion of any plant, fish or other living matter in water or soil of an amount, concentration or level in excess of that prescribed by the regulations.

A certificate of approval is required from the Ministry for the methods or devices to be employed to control or prevent the emission or discharge of any contaminant into any part of the natural environment other than water. Plans, specifications and other information and reports on tests or experiments relating to the plant, structure, equipment or apparatus or to the methods and devices to be employed to control or prevent the emission or discharge of a contaminant may be required for approval.

The Act requires that the Ministry be notified when any contaminant of an amount, concentration or level is in excess of that prescribed by the regulations.

Part V of this Act includes the procedures to be followed for a waste management system. The Director must issue a certificate of approval for a person to establish or operate a waste management system or a waste disposal site. Plans and specifications of any work to be undertaken must accompany the application.

A public hearing by the Environmental Assessment Board is required before Ministerial approval will be granted for the use, operation, establishment, alteration, enlargement or extension of a waste disposal site for disposing of hauled liquid industrial waste or hazardous waste that is the equivalent of domestic waste of not less than 1500 persons.

The proposed use of land or land covered by water which has been previously used for the disposal of waste must be approved by the Minister unless a period of twenty-five years has passed since the time which the area ceased operating as a waste disposal site.

The requirements in Part VII - Sewage Systems pertain to public sector projects. Similar requirements of relevance to mines are contained in The Ontario Water Resources Act.

If the Minister deems it necessary, for the protection or conservation of the natural environment, or the health of any persons, or to property, he may issue a stop order or a control order to limit or control the rate of addition, emission or discharge of the contaminant.

REQUIREMENTS

NAME :	Certificate of Approval Air	NUMBER :	MOE - 2
ACT :	Environmental Protection Act	KEY CONTACT :	Regional Director
AGENCY :	Ministry of the Environment	TIMING :	Dependent
MINE TYPES :	All	TYPE :	Submission
MINE PHASE :	Development, Operation	STATUS :	Regulation
		SIGNIFICANCE :	High - will affect mill design
		CROSS REF. :	

For plans to establish or expand an existing stationary operation resulting in an emission being vented to the environment, a certificate of approval for air must be obtained under Section 8 of the Act. This application must be submitted prior to construction of any facilities. The application is to be supported by plans and specifications concerning methods and control devices. Standards must meet the requirements of Schedule 1 of Regulation 15 at the point of impingement of the discharge plume. Ministry of the Environment must be notified of any exceedences over these standards.

Designated ambient air quality criteria are contained in O. Reg. 872/74.

Certification of all incineration and burning equipment is also required. The certificate is required for any equipment installed in the mine or project area for incinerating or burning materials. These include the burning of:

- garbage, refuse, etc.
- burning of oil, grease, etc.
- incinerating of any other materials

The burning of slash or other vegetations not in any equipment

requires a fire permit under the Forest Fires Prevention Act.

The approval is required for boilers, unit and duct heating units, cooling units.

MOE - Internal Review

- (1) Regions - Industrial Abatement
- (2) Pollution Control Branch
- (3) Air Resources Branch
- (4) Industrial Approvals Section

Interministerial Review

- (1) Ministry of Intergovernmental Affairs
- (2) Municipalities where relevant
- (3) Atmospheric Environment Service (Environment Canada)
- (4) Ministry of Health
- (5) Ministry of Labour
- (6) Ministry of Natural Resources

Appeals

Appeals can be made to the Environmental Appeal Board

REQUIREMENTS

NAME : Waste Disposal Site Approval Waste Management System Approval	NUMBER : MOE - 3
ACT : Environmental Protection Act	KEY CONTACT : Regional Director
AGENCY : Ministry of the Environment	TIMING : Dependent (must be renewed 1 to 5 years)
MINE TYPES : All	TYPE : Submission
MINE PHASE : Exploration - Development Development	STATUS : Regulation
	SIGNIFICANCE : Moderate - excludes tailings
	CROSS REF. :

Under Section 31, a certificate of approval must be obtained from the Director for a waste management system or a waste disposal site. R.R.O. 1970, Regulation 824 as amended prescribes the standards for solid waste disposal. The purpose of these regulations is to ensure that the sites and systems used to collect, transport and dispose of hauled wastes (other than from septic or holding tanks) do not cause environmental degradation. This includes new sites and renewals.

Under these regulations mine tailings are excluded. (For mine tailings approval see MOE - 14).

Discharge or removal of toxic or hazardous wastes would be included under this approval.

The approval is valid for a period of 1 to 5 years depending on the site.

The application is submitted to the Director of the Regional Office prior to construction or plans for a waste management system or disposal site. The owner may be required to submit plans and specifications of the work to be undertaken.

Waste Management Systems are classified as follows:

- 1) Municipal Waste Management Systems;
- 2) Private Waste Management Systems;
- 3) Individual Collection Systems;
- 4) Hauled Liquid and Hazardous Waste Collection Systems; and
- 5) Marine Craft Waste Disposal Systems.

(NOTE: Individual Collection Systems are exempted from the EPA and R.R.O. 1970, Regulation 824)

- a) Waste disposal sites are defined to include any land or land covered by water, upon, into, in or through which, or building or structure in which, waste is deposited or processed and any machinery or equipment or operation required for its treatment and disposal. Waste disposal sites are classified as follows:

- i) Dumps,
- ii) Grinding Sites,
- iii) Composting Sites,
- iv) Incineration Sites,
- v) Landfilling Sites,
- vi) On-Site Incinerators,
- vii) On-Site Garbage Grinders,
- viii) Packing and Baling Sites,
- ix) Transfer Stations,
- x) Derelict Motor Vehicle Site,
- xi) Organic Soil Conditioning Sites

(NOTE: On-Site Incinerators and On-Site Garbage Grinders are exempted from the Act and Regulations)

- b) Corporations and individuals must obtain a certificate before establishing or operating a garbage collection system, most types of incinerators, a landfill site, dump or any other waste disposal site or waste management system of the type

requiring such an approval.

The Director may refuse to issue approval:

- (a) Where the waste management system of the waste disposal site does not comply with the Act or Regulations; and
- (b) Where the Director considers, upon probable ground, that the use, establishment, operation, alteration, enlargement, or extension of a waste management system of a waste disposal site may create a nuisance, is not in the public interest or may result in a hazard to the health or safety of any person.

Internal Reviews

- (1) Industrial Approvals Section
- (2) Air Resources Branch
- (3) Pollution Control Branch
- (4) Environmental Appeal Board
- (5) Regions

Interministerial

- (1) Ontario Municipal Board
- (2) Ministry of Natural Resources
- (3) Ministry of Intergovernmental Affairs
- (4) Ministry of Health
- (5) Municipalities

Hearings

Public hearings are mandatory for waste volumes equivalent to a domestic waste of not less than 1,500 persons but can be held at the discretion of the Director.

REQUIREMENTS

NAME : Land Use Approval
(Waste Sites)

ACT : Environmental Protection Act

AGENCY : Ministry of the Environment

MINE TYPES : All

MINE PHASE : Development

NUMBER : MOE - 4

KEY CONTACT : Environmental
Approvals Branch -
Director D.P. Caplice

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Under Section 46, approval from the Minister must be obtained when proposing to use land or land covered by water which has, in the last 25 years, been used as a waste disposal site.

REQUIREMENTS

NAME : Noise Guidelines

NUMBER : MOE - 5

ACT : Environmental Protection Act,
Environmental Assessment Act

KEY CONTACT : Regional Director,
Environmental Approvals Branch,
Noise Pollution Control Section

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development, Operation

STATUS : Guidelines

ACTION :

SIGNIFICANCE : Moderate

CROSS REF.:

Under Section 8 of The Environmental Protection Act, noise is considered a contaminant whose releases to the atmosphere are regulated. MOE has published guidelines for the assessment of noise required under The Environmental Assessment Act and such guidelines should be reviewed for all mining operations particularly if the surrounding area is not remote. Even if remote, acoustics must be considered for a complete environmental assessment.

Two guidance documents of relevance are:

- (1) "Model Municipal Noise Control By-Law as Amended"
- (2) "Guidelines on Information Required for the Assessment of Potential Noise Sources".

REQUIREMENTS

NAME : Guidelines and Criteria
for Water Quality Management
ACT : in Ontario

NUMBER : MOE - 6

KEY CONTACT :

AGENCY : Ministry of the Environment

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Guideline

ACTION :

SIGNIFICANCE : Moderate

CROSS REF. :

Water quality criteria are established for various uses including industrial cooling, the iron and steel industry and for public and private water supplies from both surface and ground water sources. It is recommended that these criteria be kept in mind by the mining industry to obtain approvals for the required water uses and discharges. Major requirements in this guideline refer to:

- water quality criteria for the protection of fish, other aquatic life and wildlife
- criteria for public surface water supplies
- criteria for public ground water supplies
- criteria for aesthetics and recreation

The Relevant Guidelines and Criteria for Water Quality Management are appended.

2 WATER QUALITY CRITERIA FOR THE PROTECTION OF FISH, OTHER AQUATIC LIFE AND WILDLIFE (F & W)

The following criteria are considered to be satisfactory for fish, other aquatic life and wildlife. Reference is made to aspects of water quality considered to be most important in the light of current knowledge. Narrative guidelines are offered where quantification is not yet possible.

Dissolved Materials

Dissolved materials should not be added to increase the concentration of dissolved solids by more than one-third of the natural condition of the receiving water, owing to potentially harmful osmotic effects of high concentrations. Dissolved materials that are harmful in relatively low concentrations are discussed in the section "Toxic Substances".

pH, Alkalinity, Acidity

(1) pH should be maintained within a range of 6.5 to 8.5

(2) To protect the carbonate system, and thus the productivity of the water, acid should not be added in sufficient quantity to lower the total alkalinity to less than 20 mg/l.

Temperature

(1) General

Unless a special study shows that discharge of a heated effluent into the hypolimnion of a lake will be desirable, such practice is not recommended and water for cooling should not be pumped from the hypolimnion to be discharged to the same body of water.

The normal daily and seasonal temperature variations that were present before the addition of heat due to other than natural causes should be maintained.

Wherever possible, heated discharges should be located where elevated temperature will enhance biotic utilization of the water by supporting a wider variety of water uses.

(2) Great Lakes and Connecting Waters

(a) Heated discharges are not permitted that may stimulate production of nuisance organisms or vegetation or that are or may become injurious to wildlife, waterfowl, fish or other aquatic life or the growth and reproduction thereof. For each discharge of a heated effluent, acceptable mixing zones will be established on the basis of features and facts pertinent to that specific situation.

(b) Heat may not be discharged in the vicinity of spawning areas or where increased water tem-

perature might interfere with recognized movements of spawning or migrating fish populations.

(3) Inland Waters

(a) Heated discharges to inland waters will not be permitted unless it is clearly demonstrated that heated effluents will enhance the usefulness of the water resource without endangering the production and optimum maintenance of wildlife, fish and other aquatic species. It shall be the responsibility of the user to provide evidence to support the acceptability of the discharge under these terms.

(b) Inland trout streams, salmon streams, trout and salmon lakes and the hypolimnion of lakes and reservoirs containing salmonids and other cold water forms should not be warmed.

(c) Heat may not be discharged in the vicinity of spawning areas or where increased temperature might interfere with recognized movements of spawning or migrating fish populations.

Dissolved Oxygen

(1) Warm-water Biota

The dissolved oxygen (DO) concentration should be above 5 mg/l at all times, except that in certain situations concentrations may range between 5 and 4 mg/l for short intervals within any 24-hour period provided that water quality is favourable in all other respects.

(2) Cold-water Biota

In spawning areas, DO levels must not be below 7 mg/l at any time. Elsewhere, DO concentrations should not be below 6 mg/l. In certain situations, they may range between 6 and 5 mg/l for short intervals within any 24-hour period, provided the water quality is favourable in all other respects.

Carbon Dioxide

The "free" carbon dioxide concentration should not exceed 25 mg/l.

Oil

Oil, petrochemicals or other immiscible substances that will cause visible films or toxic, noxious or nuisance conditions should not be added to water.

Turbidity

(1) Turbidity associated with waste inputs should not exceed 50 Jackson units in warm-water streams or 10 Jackson units in cold-water streams.

(2) There should be no discharge which would cause turbidities exceeding 25 Jackson units in warm-water lakes or 10 Jackson units in cold-water or oligotrophic lakes.

Settleable Materials

Substances should not be added that will adversely affect the aquatic biota or will create objectionable deposits on the bottom or shore of any body of water.

Colour and Transparency

For effective photosynthetic production of oxygen, it is required that 10 per cent of the incident light reach the bottom of any desired photosynthetic zone in which adequate dissolved oxygen concentrations are to be maintained.

Floating Materials

All floating materials, other than those of natural origin, should be excluded from streams and lakes.

Tainting substances

All materials that will impart odour or taste to fish or edible invertebrates should be excluded from receiving waters at levels that produce tainting.

Radionuclides

Radioactive materials should not be present in natural waters as a consequence of failure to exercise necessary controls of radioactivity releases to keep exposure to a minimum.

Experience has shown that standards established for drinking water assure that people will receive no more than currently acceptable amounts of radioactive materials from aquatic sources and that fish and other aquatic life will not receive an injurious dose of radiation.

Thus, present standards accepted for the protection of fish and other aquatic life are as follows:

Gross beta emitters	pc/l
Radium-226	1000
Strontium-90	3
	10

Where other radioisotopes occur, the significance of the exposure of aquatic species to these forms of radiation should be assessed for each situation, both with respect to potential damage to the organisms themselves and to humans where fish or other edible forms are utilized.

Plant Nutrients and Nuisance Growths

(1) Nutrients from unnatural sources that will stimulate production of algae, nuisance vegetation or offensive slime growths should not be added to water. The addition of sulphates or manganese oxide to a lake should be limited if iron is present in the hypolimnion as these substances may increase the quantity of available phosphorus.

(2) Organic or other materials that will promote an increased zone of anaerobic decomposition within a lake, reservoir or other body of water should not be allowed to enter the water.

(3) The naturally-occurring ratios of nitrogen (particularly NO₃ and NH₄) to total phosphorus, and their amounts, should not be radically changed by the addition of materials from waste sources and land drainage.

Toxic Substances

Toxic substances must not be added to water in concentrations or combinations that are toxic or harmful to human, animal, plant or aquatic life, except where the application of approved substances for the control of nuisance organisms has been authorized by the Ministry (Section 28b, OWRC Act).

The evaluation of toxicity for aquatic organisms is based on use of the TLM or median tolerance limit. This represents the concentration at which half the test organisms will succumb over a given period of exposure such as 24, 48 or 96 hours. It does not, therefore, represent the safe concentration and an application factor is applied to ensure a safe condition, including allowance for sub-lethal effects.

(1) Substances of Unknown Toxicity

All effluents containing foreign materials should be considered harmful and not permissible until bioassay tests have shown otherwise. The onus for demonstrating that an effluent is harmless in the concentrations to be found in the receiving waters rests with those responsible for the discharge. Information concerning acceptable bioassay procedures is available from the Ministry.

(2) Application Factors

Concentration of materials that are non-persistent (that is, have a half-life of less than 96 hours), or have non-cumulative effects after mixing with the receiving waters, should not exceed 1/10 of the applicable 96-hour TLM value at any time or place based on species representative of local conditions. The 24-hour average of the concentration of these materials should not exceed 1/20 of the TLM value after mixing. For other toxicants, the concentrations should not exceed 1/20 and 1/100 of the TLM value under the aforementioned conditions.

(3) Additive Effects

When two or more toxic materials that have additive effects are present at the same time in the receiving water, some reduction is necessary in the permissible concentrations as derived from bioassays on individual substances or wastes. The amount of reduction required is a function of both the number of toxic materials present and their concentrations in respect to the derived permissible concentration. An appropriate means of assuring that the combined

amounts of the several substances do not exceed a permissible concentration for the mixture is through the use of the following relationship:

$$\left(\frac{C_a}{L_a} + \frac{C_b}{L_b} + \dots + \frac{C_n}{L_n} \leq 1 \right)$$

where C_a, C_b, \dots, C_n are the measured concentrations of the several toxic materials in the water and L_a, L_b, \dots, L_n are the respective permissible concentration limits derived for the materials on an individual basis. Should the sum of the several fractions exceed one, then a local restriction on the concentration of one or more of the substances is necessary.

(4) Pesticides

(a) Chlorinated Hydrocarbons:

Any addition of chlorinated hydrocarbon insecticides is likely to cause damage to some desired organisms and their use should be avoided.

(b) Other Chemical Pesticides

Other pesticides and herbicides gaining access to water can cause damage to desirable organisms and should be used with utmost discretion and caution. Tables F & W-1 and F & W-2 list the 48-hour TLM values of a number of pesticides for various types of fresh water organisms. To provide reasonably safe concentrations of these materials in receiving waters, application factors ranging from 1/10 to 1/100 should be used, with these values depending on the characteristic of the pesticide in question and used as specified in (2) above. Concentrations thus derived may be considered tentatively safe under the conditions specified. TLM values and related application factors are subject to revision as additional bioassay information is obtained for species which may be more representative of local conditions.

(5) Other Toxic Substances

(a) ABS: The concentration of ABS should not exceed 1/7 of the 48-hour TLM at any time or place.

(b) LAS: The concentration of LAS should not exceed 1/7 of the 48-hour TLM at any time or place.

(c) ARSENIC: An application factor of 1/100 should be applied to the 96-hour TLM value as a tentative safe concentration for continuous exposure. An environmental

tal level of .01 mg/l should not be exceeded under any circumstances.

(d) AMMONIA:

Permissible concentrations of ammonia should be determined by the flow-through bioassay with the pH of the test solution maintained at 8.5. DO concentrations between 4 and 5 mg/l, and temperatures near the upper allowable levels.

(e) CADMIUM:

The concentration of cadmium must not exceed 1/500 of the 96-hour TLM concentration at any time or place.

(f) CHROMIUM:

The concentration of chromium should not exceed 1/100 of the 96-hour TLM at any time or place.

(g) COPPER:

The maximum copper (expressed as Cu) concentration at any time or place shall not be greater than 1/12 of the 96-hour TLM value. The maximum permissible concentration for continuous exposure is between 3 per cent and 7 per cent of the 96-hour TLM.

(h) LEAD:

The concentration of lead should not exceed 1/20 of the 96-hour TLM at any time or place and the 24-hour average should not exceed 1/100 of the 96-hour TLM concentration after mixing.

(i) MERCURY:

Owing to demonstrated cumulative effects of mercury in fish, and the attendant hazard to other animals, discharges of mercury to water should be avoided.

(j) NICKEL:

The concentration of nickel should not exceed 1/50 of the 96-hour TLM concentration at any time or place.

(k) ZINC:

The concentration of zinc should not exceed 1/100 of the 96-hour TLM concentration at any time or place.

TABLE F & W-1 INSECTICIDES*

(48-hour TLM values from static bioassay, in micrograms per litre. Exceptions are noted.)

Pesticide	Stream Invertebrate ¹		Cladocerans ²		Fish ³		Gammarus Lacustins, ⁴ TLM
	Species	TLM	Species	TLM	Species	TLM	
Abate	Pteronarcys californica	100			Brook trout	1,500	640
Aldrin ⁴	P. californica	8	Daphnia pulex	28	Rainbow trout	3	12,000
Allethrin	P. californica	28	D. pulex	21	- do -	19	20
Azodrin			D. magna	345	- do -	7,000	
Aramite	P. californica	110	Simocephalus serrulatus		Bluegill	35	100
Baygon ⁵	P. californica	130			Fathead	25	50
Baytex ⁶					Brown t.	80	70
Benzene hexachloride (lindane)	P. californica	8	D. pulex	460	Rainbow t.	18	88
Bidrin	P. californica	1900	D. pulex	600	- do -	8,000	790
Carbaryl (sevin)	P. californica	1.3	D. pulex	6.4	Brown t.	1,500	22
Carbophenothion (trithion)			D. magna	0.009	Bluegill	225	28
Chlordane ⁷	P. californica	55	S. serrulatus	20	Rainbow t.	10	80
Chlorobenzilate			S. serrulatus	550	- do -	710	
Chlorthion			D. magna	4.5			
Coumaphos			D. magna	1			0.14
Cyolite			D. pulex	5,000			
Cydelthrin			D. magna	3.2			
DDD (TDE) ⁸	P. californica	1100	D. pulex	55	Rainbow t.	47,000	
DDT ⁹	P. californica	19	D. pulex	0.36			
Delnav (dioxathion)							
Delmeton (systex)							
Diazinon ¹⁰	P. californica	60	D. pulex	14			
Dibrom (naled)	P. californica	16	D. pulex	0.9			
Dieldrin ¹¹	P. californica	1.3	D. pulex	3.5			
Dilan			D. pulex	240			
Dimethoate (cygon)	P. californica	140	D. magna	21			
Dimethrin			D. magna	2500			
Dichlorvos ¹² (DDVP)	P. californica	10	D. pulex	0.07			
Disulfoton (di-syston)	P. californica	18					
					Rainbow t.	700	1
					Bluegill	700	70
					- do -	40	

* From Report of the Committee on Water Quality Criteria, Federal Water Pollution Control Administration, U.S. Department of the Interior (1968).

4 CRITERIA FOR PUBLIC WATER SUPPLIES (PWS)

Criteria are given for public and private supplies from both surface and ground water sources.

Public supplies include water systems operated by municipalities, public utilities, industries, commissions, commercial establishments, etc. where competent operation of the water supply system is provided.

Private supplies include water systems operated by personnel who may not have the necessary technical or mechanical expertise.

PWS-1 Criteria for Public Surface Water Supplies

Since treatment processes exist which can convert any raw water (with a few minor exceptions) to potable water, it is necessary to define a commonly accepted treatment system which can produce a potable water at a reasonable cost. For the purposes of these criteria, such a system has been

defined to consist of coagulation, flocculation, sedimentation and rapid sand filtration; the use of chemicals is restricted by definition to the commonly used coagulants and chlorine for disinfection.

Two types of criteria have been established, namely the Permissible Criteria and the Desirable Criteria (Table PWS-1). Waters meeting both of these criteria are acceptable for treatment by the defined treatment process stated above. Waters meeting the Desirable Criteria provide for a greater margin of safety.

It should be borne in mind that the values given under the Permissible Criteria cannot be considered as maximum single sample values. These criteria should not be exceeded over substantial portions of time. If this should occur, then it will become necessary to determine the cause and initiate corrective action. The frequency and variety of sampling should be based on the findings of a comprehensive pollution survey.

TABLE PWS-1
WATER QUALITY CRITERIA FOR
PUBLIC SURFACE WATER SUPPLIES
(Unless otherwise indicated, units are mg/l)

Constituent or Characteristic	Permissible Criteria	Desirable Criteria
Physical		
Colour (platinum-cobalt)	75 units	< 5 units
Odour	Readily removable by defined treatment	Absent
Turbidity	— do —	Absent
Temperature	85°F	Pleasant tasting
Inorganic Chemicals		
Ammonia	0.5 (as N)	< 0.01
Arsenic*	0.05	Absent
Barium*	1.0	Absent
Boron*	1.0	Absent
Cadmium*	0.01	Absent
Chloride*	250	< 25
Chromium* (hexavalent)	0.05	Absent
Copper*	1.0	Virtually absent
Dissolved Oxygen	≥ 4 (monthly mean) ≥ 3 (individual sample)	Near saturation 1.0
Fluoride*	See footnote (1)	
Hardness*	Acceptable levels will vary with local hydrogeologic conditions and consumer acceptance.	
Iron (filterable)	0.3	Virtually absent
Lead*	0.05	Absent
Manganese* (filterable)	0.05	Absent
Nitrate plus Nitrite*	10 (as N)	Virtually absent
pH range	6.0-8.5 units	Least amount of interference with treatment process
Phosphorus* (phosphates)		
Selenium*	Not encourage growth of algae or interfere with treatment process	
Silver*	0.01	Absent
Sulphate*	0.05	Absent
Total Dissolved Solids* (filterable residue)	250	< 50
Uranyl Ion*	500	< 200
Zinc*	5	Absent
	5	Virtually absent
Organic Chemicals⁽²⁾		
Carbon chloroform extract* (CCE)	0.15	< 0.04
Cyanide*	0.20	Absent
Methylene blue active substances*	0.5	Virtually absent
Oil and grease*	Virtually absent	Absent

Table PWS-1 (cont.)

Constituent or Characteristic	Permissible Criteria	Desirable Criteria
Pesticides		
Aldrin*	0.017	— do —
Chlordane*	0.003	— do —
DDT*	0.042	— do —
Dieldrin*	0.017	— do —
Endrin*	0.001	— do —
Heptachlor*	0.018	— do —
Heptachlor epoxide*	0.018	— do —
Lindane*	0.056	— do —
Methoxychlor*	0.035	— do —
Organic phosphates plus carbamates*	0.1	— do —
Toxaphene*	0.005	— do —
Herbicides		
2,4-D plus 2,4,5-T, plus 2,4,5-Tp*	0.1	— do —
Phenolic Substances*	Virtually absent	— do —
Radioactivity	(pc/l)	(pc/l)
Gross beta*	1,000	< 100
Radium-226*	3	< 1
Strontium-90*	10	< 2
Microbiological ⁽¹⁾		
Coliform organisms (at 35°C)	5,000/100 ml	< 100/100 ml
Fecal coliforms (44.5°C)	500/100 ml	< 10/100 ml
Fecal streptococci (35°C)	50/100 ml	< 1/100 ml
Total Bacteria (20°C)	100,000/100 ml	< 1,000/100 ml
Clostridia (in water) (35°C)	50/100 ml	0/100 ml

* The defined treatment process has little effect on the constituents.

(1) Annual Avg. of Max. Daily Air Temp. F.

50.0 to 53.7

53.8 to 58.3

58.4 to 63.8

(2) Organic chemicals should not be present in concentrations as to cause adverse tastes and odours which cannot be removed by the defined treatment and/or by chlorination only.

(3) A monthly geometric mean of the results of raw water samples collected on a weekly basis (minimum of one sample per week) should be less than the numbers given under the Permissible Criteria column. These figures do not imply a relationship between bacterial groups.

PWS-2 Criteria for Public Ground Water Supplies

With the exception of dissolved oxygen, fluorides and microbiological criteria, the water quality criteria for surface water apply to ground water supplies.

For fluorides, hydrogen sulphide and pollution indicator organisms, the following apply to ground water supplies:

	Permissible Criteria	Desirable Criteria
	(Unless otherwise indicated, units are mg/l)	
Fluoride	2.4	1.0
Hydrogen Sulphide	0.1	Absent
Pollution Indicator Organisms	Coliform and other pollution indicator organisms should be virtually absent from all ground water supplies.	

It is considered desirable to provide the maximum of treatment — chlorination — for all ground water supplies. This measure ensures that nuisance organisms which exist in virtually all waters do not get the opportunity to develop a foothold in a water distribution system and thereby create objectionable conditions.

PWS-3 Criteria for Private Water Supplies

The raw water available to private supplies such as individual dwellings, cottages, farms, etc., must be of such quality that it can be used in the raw state or be made acceptable for use with a minimum of treatment limited to disinfection, filtration and/or softening. Economic considerations and

Microbiological Criteria:

Microorganisms	Permissible Criteria		Desirable Criteria	
	Chlorination only	Chlorination & Filtration	No Treatment	
Coliforms (35°C)	100/100 ml	400/100 ml	0/100 ml	
Fecal Coliforms (44.5°C)	10/100 ml	40/100 ml	0/100 ml	
Enterococci (35°C)	1/100 ml	4/100 ml	0/100 ml	
Total Bacteria (20°C)	1000/100 ml	4000/100 ml	10/100 ml	
Clostridia (in water) (35°C)	0/100 ml	4/100 ml	0/100 ml	

Raw water samples should be collected at least monthly. The Geometric Mean of sample results should not exceed the values given in the table above.

lack of technical/mechanical expertise will prohibit the use of raw water supplies that require extensive treatment.

Some surface supplies have turbidities, colour and other undesirable constituents in excess of what can be used effectively in home or farm operations. Some ground water supplies (wells and springs) harbour objectionable gases, nuisance bacteria, in addition to having high concentrations of iron and being highly mineralized. The initial approach in establishing a private water supply should be to explore the ground water potential from the aspects of both quality and quantity. In many instances, deficiencies in ground water quality can be offset at a relatively low cost compared to that for surface waters.

Criteria for private water supplies are identical to the surface water criteria for public water supplies, with the exception of fluorides, hydrogen sulphide, physical and microbiological characteristics. For fluorides and hydrogen sulphide, the applicable criteria appear in Section PWS-2.

Physical Criteria:

The water supply should be substantially free from substances offensive to sight, taste or smell. Threshold odour values in excess of three units are generally considered objectionable.

Colour in the water supply should not exceed 15 units (platinum-cobalt scale).

Turbidity should be less than five units. Turbidities of up to 20 units may be removed relatively easily by sand or diatomaceous earth filters.

5 CRITERIA OF WATER QUALITY FOR AESTHETICS AND RECREATION (A & R)

All surface waters should be capable of supporting life forms of aesthetic value. The positive aesthetic and recreational values of water should be attained through continuous enhancement of water quality. Surface waters should be of such quality as to provide for the enjoyment of recreational activities such as hunting and fishing which are based on the utilization or consumption of fish, waterfowl and other forms of life.

The aesthetic and recreational values of unique or outstanding waters should be recognized and protected by development of appropriate water quality standards for each individual case. To retain or establish unspoiled wilderness values, it may be necessary to control access by mechanized methods of transportation.

General criteria for recreation and aesthetic use and specific criteria for total body contact recreation follow.

A & R-1 General Criteria for Recreation and Aesthetics

Surface waters should be free of substances attributable to discharge of waste or land drainage which may impair aesthetic or recreational use, as follows

- (1) Materials that will settle to form objectionable deposits.
- (2) Floating debris, oil, scum and other matter.
- (3) Substances producing objectionable colour, odour, taste or turbidity.
- (4) Materials, including radionuclides, in concentrations or combinations which are toxic or which produce undesirable physiological responses in humans, fish and other life and plants.
- (5) Substances, including nutrients, and conditions, including temperature, or combinations thereof in a degree or concentration which produces undesirable types or abundance of aquatic life.

A & R-2 Criteria for Total Body Contact

Recreation

Surface waters for total body contact recreational use should be free of substances attributable to discharge of waste or land drainage as follows:

- (1) Materials which will cause the pH to change beyond the range 6.5-8.3.
- (2) Materials which will obscure visibility in the water. In designated swimming and diving areas, clarity should be such that a Secchi Disc on the bottom is visible from the surface.
- (3) Conditions which will cause the water temperature to exceed 85°F.
- (4) Microbiological Criteria
Water used for body contact recreational activities should be free from pathogens including any bacteria, fungi or viruses that may produce enteric disorders or eye, ear, nose, throat and skin infections. Where ingestion is probable, recreational waters can be considered impaired when the coliform, fecal coliform, and/or enterococcus geometric mean density exceeds 1000, 100 and/or 20 per 100 ml respectively, in a series of at least ten samples per month, including samples collected during week-end periods.

If these criteria are exceeded, it will become necessary to determine the cause and initiate corrective action.

When evaluating a given area of water for recreational use, the appropriate numbers of samples, and the choice of tests to be performed should be determined by consultation between sampler and analyst, prior to sampling. An effort should be made to increase utilization of the fecal coliform and enterococcus tests since these presently appear to be the more relevant guides to the bacterial quality of bathing waters

GLOSSARY OF TERMS

Bioassay	— A controlled laboratory procedure which subjects live aquatic organisms to various environmental stresses.
Effluent Requirements	— Numerical or verbal descriptions of the quality of a waste or drainage effluent at the point of discharge to a receiving water body, land disposal site or waste disposal well.
Eutrophication	— The increase in the nutrient content of the natural waters of a lake or other body of water.
Geometric Mean	— The n th root of the product of n observations. The equation for the geometric mean (G_n) can be expressed as: $G_n = \sqrt[n]{X_1 \cdot X_2 \cdot X_3 \cdot \dots \cdot X_n}$ or $G_n = \text{antilog} \left(\frac{\log X_1 + \log X_2 + \dots + \log X_n}{n} \right)$
Land Drainage	— Water that has drained from the land surface naturally or through man-made drainage systems.
Milligrams per Litre (mg/l)	— A unit of measure expressing the concentration of a substance in a solution.
Milligram equivalents per litre (mg eq/l)	— A unit indicating the chemical equivalence of ions; derived by dividing the concentration of an ion in milligrams per litre by the combining weight of that ion.
Oligotrophic	Note: combining weight = $\frac{\text{atomic or molecular weight of ion}}{\text{ionic charge}}$ — Waters with a small supply of nutrients and hence a small organic production; usually having abundant dissolved oxygen at all depths.
Photosynthetic (adj)	— Relating to the process by which the chlorophyll-bearing cells of green plants convert carbon dioxide (CO_2) and water (H_2O) into sugar ($\text{C}_6\text{H}_{12}\text{O}_6$) and oxygen (O_2) in the presence of light.
Raw Water	— Surface or ground water, prior to treatment.
Waste	— Liquid carrying unwanted materials or compounds resulting from human activities or enterprises to a point of discharge. The mixture may or may not have received treatment.
Water Quality Criteria	— Numerical or verbal descriptions of the quality of water required for particular uses.
Water Quality Standards	— Numerical or verbal descriptions of the quality of water required for a variety of uses in a given drainage system.

ACT : The Ontario Water Resources Act

DATE : R.S.O. 1970 Chap 332
1972, c.1, s.70;
1973, c. 90;
1974 c. 19;
1975, c. 71.

AGENCY : Ministry of the Environment

RELEVANCE : Surface and Ground Water
Contamination, and Tailings
Disposal

This Act prevents the discharge in water, or in a place where it will end up in water, of any material that will pollute or affect the health and safety of persons, animals or birds that may consume any plant, fish or other living organism from that water.

The Minister has the authority to examine, at any time, surface waters or ground waters to determine if any pollution exists and its causes. Where the discharge or deposit of material in water occurs abnormally the Minister must be notified.

A permit must be acquired from the Ministry for the taking of water totalling more than 10,000 gallons per day by means of a well; an inlet or inlets from a surface source of supply; or by means of a structure or works for the diversion or storage of water.

No person shall make a well or hole in the ground for the purpose of obtaining water except by digging in an area designated by the regulations to this Act and without a permit issued by the Director.

No person shall carry on the business of boring or drilling wells for water unless he is a holder of a licence from the Director to do so.

A permit is required to make a well or hole in the ground for the purpose of obtaining water.

Approval is required from the Ministry for plans to establish any water works, or the extension or change in any existing water works capable of supplying water at a rate greater than 10,000 gallons per day. The Ministry requires the plans, specifications and an engineer's report of the water supply and the work to be undertaken when submitting for the approval.

Plans for the establishment of any sewage works, serving more than five residences, or the extension of any change in existing sewage works requires the approval of the Ministry. Plans, specifications and an engineer's report of the proposed work, and the location of the discharge of effluent must be submitted for approval.

In this Act "sewage" includes drainage, storm water, commercial

wastes and industrial wastes and any other matter or substance specified by the regulations.

Sections 42 to 51 legislate the design and approvals for sewage works and include works for the distribution of sewage on the surface of the ground for the purpose of disposing of sewage. It is this Section which regulates mine tailings disposal.

Subject to the approval of the Lieutenant Governor in Council, the Minister may make regulations concerning ; water works; sewage works and the content of sewage entering sewage works; prescribing standards of quality for potable and other water supplies; designating areas within which wells or holes may not be made for the purpose of obtaining water, except by digging; regulating and controlling the location, spacing, boring and drilling of water wells; and regulating and controlling the use of water from any source of supply. The application of any of the above-mentioned regulations may be general or limited territorially or as to time or otherwise.

REQUIREMENTS

NAME : Non-Standard Discharge

NUMBER : MOE - 7

ACT : Ontario Water Resources Act

KEY CONTACT : Regional Director

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

Under Section 33 of the Act, MOE must be notified immediately of any discharge or deposit which is not in the normal course of events where such discharges may contaminate surface or ground waters.

REQUIREMENTS

NAME : Permit to Take Water	NUMBER : MOE - 8
ACT : Ontario Water Resources Act	KEY CONTACT : Regional Director
AGENCY : Ministry of the Environment	TIMING : Dependent
MINE TYPES : All	TYPE : Submission
MINE PHASE : Development	STATUS : Regulation
	SIGNIFICANCE : Moderate
	CROSS REF. :

With few exceptions, a permit is required to take more than 10,000 gallons of water in a day from any ground or surface water source.

The permit is required for industrial, mining or for the dewatering of pits and quarries as well as the diversion and damming of watercourses. The permit may be required for:

- mine dewatering
- water withdrawals for processing
- well construction

Any water removal which interferes with any public or private interest may be prohibited by the MOE.

Permits to take water from a surface water source are valid for 5 years.

Permits to take water from a ground water source are valid for 10 years.

REQUIREMENTS

NAME : Water Well Licence

NUMBER : MOE - 9

ACT : Ontario Water Resources Act

KEY CONTACT :

Water Resources Branch
William McClenaghan

AGENCY : Ministry of the Environment

TIMING : Regular (annual -
expires Dec. 31)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

The licensing of persons to drill water wells is done by regulations contained in R.R.O. 1970, Regulation 648. Under these regulations a licence is only issued to a person with an equivalent of two years experience in drilling wells.

In addition, this regulation specifies drilling, pumping, yield testing, plugging and reporting requirements for all water wells.

REQUIREMENTS

NAME : Liquid Industrial Waste Approval	NUMBER : MOE - 10
ACT : Ontario Water Resources Act	KEY CONTACT : Regional Director
AGENCY : Ministry of the Environment	TIMING : Dependent
MINE TYPES : All	TYPE : Submission
MINE PHASE : Development	STATUS : Regulation
	SIGNIFICANCE : Moderate
	CROSS REF. : MOE - 17 MOE - 18

Under Section 42, approval is required for the collection treatment and disposal of liquid industrial wastes. These effluents include waste of low strength, on a continuous basis which will be discharged into a watercourse, storm sewer or to the surface of the land.

The Ministry will review the plans and may issue a certificate of approval valid until processes or conditions at the site change.

Information on MOE's industrial pollution control policy program and procedures is available from the Environmental Approvals Branch (Director D.P. Caplice) and should be reviewed before submission of application MOE - 10.

A report is prepared by the company containing information on past performance of similar facilities, or on design data obtained from pilot plant studies.

The application should contain the general arrangement and detailed engineering drawings of the proposed facilities.

The full name of this application is "Application for Approvals of Plans and Specifications for Construction of Works for the Collection, Transmission, Treatment and Disposal of Liquid

Industrial Wastes".

Hearings

1. Mandatory if sewage works are to extend across municipal boundaries.
2. Optional for sewage treatment works within a municipality where the Director feels it is in the public interest to hold a hearing.

Appeals

1. May be initiated by the applicant if dissatisfied with conditions of an approval or refusal. Appeals are held before the Environmental Appeal Board.

REQUIREMENTS

NAME : Certificate of Approval
for Water Works

NUMBER : MOE - 11

ACT : Ontario Water Resources Act

KEY CONTACT :
Regional Director

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF.:

Water works capable of supplying water at a rate greater than 10,000 gallons/day must be approved. The Design and Equipment section reviews all design submissions which are to be substantiated by sanitary, mechanical and electrical engineering design information.

The purpose of this approval is to ensure that facilities for the collection, production, treatment, storage, supply and distribution of water will be sufficient to provide water in adequate quantity and quality.

MOE - Internal Review

- (1) Sections of Environmental Approvals Branch (Design and Equipment Section)
- (2) Project Co-ordination Branch
- (3) Water Resources Branch (Municipal and Private Approvals Section)
- (4) Pollution Control Branch
- (5) Environmental Assessment Board
- (6) Regions

Interministerial Review

- Ministry of Labour
- Ministry of Natural Resources
- Ministry of Transportation and Communications
- Ministry of Intergovernmental Affairs
- Regional Municipalities
- Ministry of Housing
- Ontario Municipal Board
- Central Mortgage and Housing Corporation
- Ontario Housing Commission

Appeals may be made with the Environmental Appeal Board concerning conditions of approval or refusal.

REQUIREMENTS

NAME : Potable Water Approval

NUMBER : MOE - 12

ACT : Ontario Water Resources Act

KEY CONTACT : Regional Director

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Under Section 41 of the Act, approval is required for the design of a potable water supply system.

REQUIREMENTS

NAME : Plumbing Works Approval

NUMBER : MOE - 13

ACT : Ontario Water Resources Act

KEY CONTACT :

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

ACTION :

SIGNIFICANCE : Moderate - but only
applicable in areas with municipal
organizations

CROSS REF.:

Special regulations are developed for plumbing for non-industrial uses in parts of Ontario which have a municipal organization. In these areas, the Plumbing Code (R.R.O. 1970, Regulation 647) as amended must be followed with approval being given. In these areas, no person shall construct, repair, renew or alter plumbing except in accordance with the regulations and it cannot be put into use until inspected and approved by the local municipality.

REQUIREMENTS

NAME : Certificate of Approval for
Sewage Works & Industrial Wastes

NUMBER : MOE - 14

ACT : Ontario Water Resources Act

KEY CONTACT : Regional Director

AGENCY : Ministry of the Environment

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High - regulates
tailings approval

CROSS REF. :

Approval under Section 42 of the Act is required for:

- (1) Sewage works serving more than five private residences
- (2) Land disposal of sewage (defined to include industrial wastes including mine tailings)

Where such works would drain directly or indirectly into a ditch drain or water body.

Approval is required prior to construction and applications should be substantiated by plans, specifications and other supporting documentation. Approval is required for the alteration of any works.

Regulations made under The Environmental Protection Act particularly O. Reg 229/79 as amended are good guidance for the requirements of sewage systems. These regulations establish ten classes of sewage systems and provide design and performance requirements for each.

REQUIREMENTS

NAME: Licences for Installing,
Hauling and Disposal of Sewage
ACT: Ontario Water Resources Act

NUMBER: MOE - 15

KEY CONTACT: Regional Director

AGENCY: Ministry of the Environment

TIMING: Regular (annual
permit)

MINE TYPES: All

TYPE: Submission

MINE PHASE: Development

STATUS: Regulation

SIGNIFICANCE: Moderate

CROSS REF.:

Under Section 61 of The Environmental Protection Act licences are required for installers of septic tanks and tile fields and for the storage, hauling or disposing of sewage from a sewage system. The purpose of the licence is to prevent environmental contamination with the installation, operation or "pump out" of such systems.

There are two classes of licence:

- (1) Constructing on site, installing, repairing, servicing, cleaning or emptying sewage system.
- (2) Storing, hauling or disposing of sewage from a sewage system.

MOE - Internal Review

- (1) Regions
- (2) Municipal and Private Approvals Section of Environmental Approvals Branch
- (3) Legal Department
- (4) District Offices

Interministerial

- (1) Ministry of Health
- (2) Health Units with agreements under Part VII of the Environmental Protection Act.

REQUIREMENTS

NAME :	Mine Mill Effluent Guidelines	NUMBER :	MOE - 16
ACT :	Ontario Water Resources Act	KEY CONTACT :	Regional Director
AGENCY :	Ministry of the Environment	TIMING :	Dependent
MINE TYPES :	All	TYPE :	Performance (submission)
MINE PHASE :	Development	STATUS :	Guidelines
		SIGNIFICANCE :	Moderate
		CROSS REF. :	

Ministry of the Environment has published water effluent guidelines for mine-mill operations entitled:

"Effluent Guidelines and Receiving Water Quality Objectives for the Mining Industry in Ontario".

These are for guidance only and specific guidelines will be developed for each new project.

These guidelines control:

- (1) mine-mill effluent
- (2) receiving water quality objectives
- (3) general water quality objectives

and are summarized on the following pages:

Parameter	Not to Exceed	Remarks
<hr/>		
(1) <u>Mine Mill Effluence</u>		
(a) Metals (excluding calcium, magnesium, potassium and sodium).	1.0 mg/l.	
(b) Cumulative concentration of Cu, Pb, Zn and Ni.	1.0 mg/l.	
(c) Substances of unknown toxicity.		Consider harmful until bioassay results.
(d) Sulphates and total dissolved solids.		Use best available practicable technology.
(e) Ammonia.		"
(f) Suspended solids.	15 mg/l.	
(g) Oxygen demand.	Depression less than 6 mg/l. for waters with cold water fishes. Depression less than 5 mg/l. for waters with warm water fishes.	
(h) pH	5.5 to 10.6	

(2) Receiving Water Quality Objectives

	<u>Hard Water</u>	<u>Soft Water</u>
		(x)
Chromium (dissolved)	0.5 mg/l. (0.05) (x)	0.5 (0.05) (x)
Cobalt "	0.5	0.5
Copper "	0.07	0.03
Iron "	0.3	0.3
Lead "	0.1 (0.05) (x)	0.05
Nickel "	1.0	0.4
Cyanide "	0.01	0.01
Ammonia (ammonia	1.5	1.5
nitrogen as N)		
Arsenic (dissolved)	0.05	0.05

(Note (x) - Public surface water supply objective.)

Soft water is that with hardness less than 100 mg/l. hardness or CaCO_3 . Most hardrock mines are in soft water areas.

(3) General Water Quality Objective

(a) Oils and other immiscible substances.	Not to be added.
(b) Colour and transparency.	Limited reduction.
(c) Floating materials.	Excluded
(d) Tainting substances.	Excluded
(e) Nutrients.	Minimized.

<u>Parameter</u>	<u>Desirable Effluent Discharge Characteristics (not to exceed)</u>	<u>Remarks</u>
Oils and Greases	15 p.p.m.	
Metals		
Cadmium	0.001 mg/l.	
Chromium	1.0 "	
Copper	1.0 "	
Lead	1.0 "	
Mercury	0.001 "	
Nickel	1.0 "	
Tin	1.0 "	
Zinc	1.0 "	
Phenols	20 p.p.b. (parts per billion)	‡ 2 to 5 p.p.b. in receiving water in defined mixing zone.
Toxic Substances	Eliminated	
Ammonia	10 mg/l.	
pH	5.5 - 9.5	
Sulphate, Chlorides and Dissolved Solids	Use best practicable technology	
Taste and Odour	Eliminated	
Temperature	11°C over receiving water	
Aesthetics	No impairment	

REQUIREMENTS

NAME : Industrial Waste Discharge
Quality

ACT : Ontario Water Resources Act

AGENCY : Ministry of the Environment

MINE TYPES : All

MINE PHASE : Development

NUMBER : MOE - 17

KEY CONTACT : Regional Director

TIMING : Dependent

TYPE : Performance

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. : MOE - 10

Ministry of the Environment has published guidelines for industrial waste discharge to public waters entitled "Objectives For The Control of Industrial Wastes Discharges In Ontario".

Mine-mill operating facilities would generally follow guidelines MOE - 16, Mine-Mill Effluent Guidelines. The industrial waste discharge guidelines are included below to indicate levels for other parameters.

<u>Parameter</u>	<u>Desirable Effluent Discharge Characteristics (not to exceed)</u>	<u>Remarks</u>
BOD ₅	15 mg/l.	In addition BOD ₅ ≤ 4 mg/l. in stream and DO ≤ 6 mg/l. for streams with cold water fishes or ≤ 5 mg/l. for streams with warm water fishes.
Suspended Solids	15 p.p.m. greater than water supply.	

REQUIREMENTS

NAME : Industrial Discharge to
Sanitary Sewer

NUMBER : MOE - 18

ACT : Ontario Water Resources Act

KEY CONTACT : Regional Director

AGENCY : Ministry of the Environment
Local Municipality

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Low - Only With
Sanitary Sewers

CROSS REF. :

Industrial waste discharge into a sanitary sewer requires approval from the owner into whose sanitary sewers it is discharging.

The Industrial Approvals Section will act as an advisor to the Municipality for any voluntarily submitted applications covering discharges to sanitary sewers.

If the industrial wastes are instrumental in causing the effluent from a sewage plant to be unacceptable, the Ministry will contact the Municipality who will, in turn, exert pressure on the company through their sewer-use-by-law.

REQUIREMENTS

NAME : Mineral Industries
Information Sheet

ACT : Ontario Water Resources Act

AGENCY : Ministry of the Environment

MINE TYPES : All

MINE PHASE : Development

NUMBER : MOE - 19

KEY CONTACT : Regional Director

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. : MOE - 10

When submitting an application for liquid industrial waste approval (MOE - 10), new mines or ore milling companies are also required to complete a mineral industries information sheet Parts I-V.

Information required is:

Part I	General design and operational data plus meteorologic, physiographic information.
Part II	Geology and mineralogy.
Part III	Subsurface mining operations.
Part IV	Mill operation data.
Part V	Tailings design data.

REQUIREMENTS

NAME : Drinking Water Objectives

NUMBER : MOE - 20

ACT :

KEY CONTACT : Regional Director

AGENCY : Ministry of the Environment

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All - mainly development

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. :

Ministry of the Environment has published objectives for drinking water giving limits that:

- (a) must not be exceeded
- (b) should not be exceeded.

Water quality parameters given are of four types:

- (1) Bacteriological quality
- (2) Physical characteristics
- (3) Chemical characteristics
- (4) Radioactivity.

ACT : The Public Health Act

DATE : R.S.O. 1970 Chap.377
1971, c.95
1972, c. 80
1973, c. 130
1974, c.64 and c.87
1975, c. 61.

AGENCY : Ministry of Health

RELEVANCE : Health at Mining
Camps

This Act is concerned with public health procedures and services and their regulations both in organized and unorganized territories.

Any locality having an existing condition that is or may become injurious or dangerous to health shall be deemed a nuisance under this Act. It includes any building, water supply, accumulation or deposit of refuse, any work, trade or business or area as declared by the medical health officer. He has the authority to close the premises until the condition no longer exists.

Specific to unorganized territories, the Minister may make regulations providing for the cleansing, regulating, and inspection of mining camps. Regulations may also be enforced respecting the employment of legally qualified medical practitioners by employers in mining camps.

Conditions concerning the arrangements for the medical and surgical care and treatment of employees and the arrangements for the hospital care may be regulated. These regulations may be either general or specific to any particular locality or industry.

The Minister may appoint in any of the unorganized districts one or more public health inspectors, who possess, in addition to the powers conferred upon public health inspectors by this Act, all the powers conferred upon local boards of health.

Schedule B defines the authority of the public health inspector in matters of enforcement and observance of the Public Health Act and any other sanitary laws. The public health inspector may enter buildings or premises to examine the areas for public health hazards.

Sections 14 thru 17 of Schedule B pertaining to sanitary sewage approvals apply under the Environmental Assessment Act.

REQUIREMENTS

NAME : Notice of Camp Opening

NUMBER : MOH - 1

ACT : Public Health Act

KEY CONTACT : Chief, Northern
Ontario Public Health Service
Dr. W.J. Copeman

AGENCY : Ministry of Health

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration, Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

A "camp" is defined to include mining camps or other places where labour is employed in territories without municipal organization.

Before a camp intended for the living accommodation for five or more employees is used, the employer shall send the Public Health Inspector a report in writing showing:

- (a) name and address of employer
- (b) camp location
- (c) number of employees camp is designed to hold
- (d) means of access to camp
- (e) nature and expected duration of work on which the employees will be employed

Where the camp is to accommodate fifteen or more persons (standard camp), the report is to contain:

- (a) location of the buildings
- (b) the source of water supply
- (c) means of sewage disposal.

Notification to the Public Health Inspector is required for any subsequent changes.

REQUIREMENTS

NAME : Camp Performance -
Public Health

ACT : Public Health Act

AGENCY : Ministry of Health

MINE TYPES : All

MINE PHASE : All

NUMBER : MOH - 2

KEY CONTACT : Chief, Northern
Ontario Public Health Service
Dr. W.J. Copeman

TIMING : Dependent

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

A comprehensive list of performance requirements is established by regulations under the Public Health Act. These include:

R.R.O. 1970	Regulation 701	Camps in Unorganized Territory
R.R.O. 1970	Regulation 715	Plumbing in Unorganized Territory
R.R.O. 1970	Regulation 718	Sanitary Code For Unorganized Territory

Regulations include:

Location of Camps: On well drained soil greater than 150
feet from water body.

Sanitation: Every camp shall be maintained in a
clean sanitary condition.

Standard Camps: Proper sleeping accommodation.
(greater than Proper washing, bathing and laundering
15 persons) facilities.
Proper serving and food storage facilities.

Inspectors may enter camps at any time and where improper conditions exist, camps may be ordered closed by the Director (Chief Northern Ontario Public Health Services).

REQUIREMENTS

NAME : Medical Contracts Approval

NUMBER : MOH - 3

ACT : Public Health Act

KEY CONTACT: Chief, Northern
Ontario Public Health Service
Dr. W.J. Copeman

AGENCY : Ministry of Health

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

Although this approval is currently not required on a practical basis, it is suggested the employer contact the Ministry prior to the medical agreement.

An employer may enter into a medical contract with a legally qualified medical practitioner for the medical and surgical care of his employees. Approval for this contract and its terms is required from the Minister, who may later require the termination of this contract.

Any variations in this contract must be approved by the Minister.

3.8 MINISTRY OF HOUSING

ACT : The Planning Act

DATE:

R.S.O. 1970, Ch. 349
1971, c. 2
1972, c. 118
1973, c. 168
1974, c. 53
1975 (2nd sess.)c.18
1976 c.38 and c. 64.

AGENCY: Ministry of Housing

RELEVANCE : Location of Mobile
Homes

This Act provides for the planning of areas designated as a municipality and, as defined by the Minister, a planning area consisting of territory without municipal organization.

Section 35c is pertinent to the use of a mobile home on a parcel of land. Mobile home is defined as "any dwelling that is designed to be made mobile, and constructed or manufactured to provide a permanent residence for one or more persons". The Minister may authorize a by-law or approve an order for the use of a mobile home on a parcel of land. Authorization is required from the Ministry for the use of more than one mobile home on any such parcel of land.

3.9 MINISTRY OF INTERGOVERNMENTAL AFFAIRS

ACT : The Fire Guardians Act

DATE : R.S.O. 1970,
Chap. 171

AGENCY : Ministry of Intergovernmental
Affairs

RELEVANCE : Minor - Burning of
Wastes

This Act applies to the townships of Ontario not located within a declared fire district. The council of a township may appoint fire guardians for the purposes of this Act. Written permission must be obtained from the fire guardian, from the 1st day of April to the 31st day of October, to set fire to any brush heap or other combustible material in any field where the fire would be likely to spread.

There are no regulations under this Act.

REQUIREMENTS

NAME : Fire Permission

NUMBER : MIG - 1

ACT : Fire Guardians Act

KEY CONTACT : Appointed Township
Fire Guardian

AGENCY : Ministry of Intergovern-
mental Affairs

TIMING : Regular (Annual)

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. : MNR - 3

Townships not located in Fire Districts under the Forest Fires Prevention Act may appoint a fire guardian. A permit is required from the guardian for any fire between April 1 to October 31 which may spread.

ACT : The Employees' Health and
Safety Act, 1976

DATE: 1976, Chap. 79

AGENCY: Ministry of Labour

RELEVANCE : Health and Safety -
To be Repealed Shortly

This Act refers to all work places as defined in Part IX of the Mining Act. It establishes controls over the employees health and safety and outlines the establishment of practices to be incorporated by employers.

In a situation of a work place where an employee has reasonable cause to believe that a machine, device or thing is unsafe to use or operate because its operation is likely to endanger himself or another employee, or the machine, device, thing or place is in contravention of Part IX of the Mining Act, the employee may refuse to work in the place. Upon refusal to continue working, the employee shall report the circumstances of the matter to his employer, who is required to investigate the report in the presence of the employee and in the presence of either a health and safety representative, a committee member who represents employees, or a person authorized by the trade union that represents the employee. The employer shall notify an appropriate inspector or engineer who shall investigate the matter. The inspector or engineer shall, following his investigation, make a decision whether the employee's complaint is legitimate and in contravention of Part IX of the Mining Act.

By a written order, the Minister may require an employer to establish a joint health and safety committee for a work place and in this order may provide for the qualifications and the terms of office of its members and its practice procedures. The function of the committee is to identify hazardous situations for the employees; make recommendations for the improved health and safety of employees; recommend the establishment of programs, measures and procedures respecting employees health and safety; and to obtain information on potential or existing hazardous materials, processes or equipment.

The Minister may also require, in writing, an employer to select one or more health and safety representatives for a work place, from non-managerial employees. These representatives may at certain times give such directions as the Minister considers advisable concerning the functions of a health and safety representative. This designated employee has the power to identify situations that may be a source of danger or hazard and to make recommendations or report his findings to the employer, employees, a trade union and a joint health and safety committee.

With the occurrence of an accident at a work place that causes serious injury or death to a person, the employer must submit a notice in writing of the occurrence to the health and safety representative. The representative may inspect the accident area and then report his findings to the committee.

REQUIREMENTS

NAME : Report of Unsafe Conditions

NUMBER : MOL - 1

ACT : Employees' Health & Safety
Act, 1976

KEY CONTACT : District Mining
Engineer

AGENCY : Ministry of Labour

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Moderate - To
Be Repealed

CROSS REF.:

The Employer is required to investigate, in the presence of the employee and a health and safety representative or committee member, an employees' report that a machine, device or thing is unsafe to use or operate.

REQUIREMENTS

NAME : Health and Safety Committee	NUMBER : MOL - 2
ACT : Employees' Health and Safety Act	KEY CONTACT : Mining Health & Safety Branch - Director P.B. McCrodan
AGENCY : Ministry of Labour	TIMING : At Times Requested
MINE TYPES : All	TYPE : Performance
MINE PHASE : All - mainly Operations	STATUS : Regulation
	SIGNIFICANCE : Moderate - To Be Repealed
	CROSS REF. :

The Minister may require an employer to establish a joint health and safety committee for a work place.

The committee would consist of the number of persons as the Minister directs. Half of the employees on the committee should be those who do not exercise managerial functions and selected by the employees themselves.

The employer is required to post the names and work locations of the committee members in a conspicuous place.

REQUIREMENTS

NAME : Health and Safety
Representative

ACT : Employees' Health and
Safety Act

AGENCY : Ministry of Labour

MINE TYPES : All

MINE PHASE : All - mainly Operation

NUMBER : MOL - 3

KEY CONTACT : Mining Health and
Safety Branch - Director
P. B. Mc Crodan

TIMING : At Times Requested

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : Moderate - To
Be Repealed

CROSS REF. :

The Minister may require an employer to cause the selection of one or more health and safety representatives for a work place. The representative selected would be from among and by the employees who do not exercise managerial functions.

REQUIREMENTS

NAME : Accident Notice

NUMBER : MOL - 4

ACT : Employees' Health and
Safety Act

KEY CONTACT : District Mining
Engineer

AGENCY : Ministry of Labour

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All - mainly Operation

STATUS : Regulation

SIGNIFICANCE : Moderate - To
Be Repealed

CROSS REF. :

The employer must give notice in writing to the health and safety representative when an accident occurs at a work place that causes serious injury or death to a person.

REQUIREMENTS

NAME : Posting Annual Summary

NUMBER : MOL - 5

ACT : Employees' Health and
Safety Act

KEY CONTACT : District Mining
Engineer

AGENCY : Ministry of Labour

TIMING : Regular (Annual)

MINE TYPES : All

TYPE : Performance

MINE PHASE : All - mainly Operation

STATUS : Regulation

SIGNIFICANCE : Moderate -
To Be Repealed

CROSS REF. :

Upon the employer's receipt of the annual summary respecting the number of work accident fatalities, a copy must be delivered to the committee and trade unions or be posted in a conspicuous place.

Upon receipt of the annual summary from the Workmen's Compensation Board, respecting the number of work accident fatalities, the employer must deliver a copy of the summary to the health and safety committee and the trade unions or post a copy of the summary in a conspicuous place.

ACT : The Mining Act, 1971, Part 1X

DATE:

R.S.O. 1970 Chap. 274
1971, c.50, s.58, c.98,
s.4, Sched. par. 22
and c.105,
1972, c.4, s.17 and
c.116,
1973, c.106

AGENCY: Ministry of Labour

RELEVANCE : Occupational Health and
Safety - To be repealed
shortly

Part IX of the Mining Act is the statute currently used to regulate virtually all occupational health and safety requirements. These and other requirements will shortly be assumed under Bill 70, The Occupational Health and Safety Act, 1978 which will greatly increase the authority of the Ministry of Labour in these areas. The following summary of Part 1X of The Mining Act is kept brief in view of its imminent repealing.

Sections 162, 164, 165 and 608 identify employment standards in and about a mine.

The responsibilities of owners and mine managers concerning mine rescue stations and first aid requirements are covered in Sections 163, 202, 222, 223 and 225.

Medical requirements for persons employed at the mine site are included in Section 167.

Section 168 identifies the requirements for the rehabilitation of tailings and plant area.

General provisions regarding the responsibility of the owner or agent of an operating mine and the persons employed therein are covered in Sections 169 to 171 and Section 597.

Requirements of the mine manager and employee concerning personal protective equipment and clothing are outlined in Section 173.

Fire protection procedures at underground mine operations and in the vicinity of shaft collars are included in Sections 175 to 195 and 561 to 563.

Fire protection requirements in and about the plant are contained in Sections 196 to 201.

Sanitation procedures in the mine and plant are defined by Sections 203 to 212.

Section 213 and 214 identify ventilation and dust control requirements in the mine and plant.

Protection procedures regarding materials under pressure, liquid containers, work on stock piles or bulk material, and general safety measures are contained in Sections 218 to 229 inclusive and 251 to 274.

Motor vehicles used for hauling on the surface and underground have special requirements as contained in Sections 230 to 240.

Health and safety requirements regarding the machinery in the mine and plant are included in Sections 241 to 250.

Mine dewatering procedures and the use of water in and about the mine with respect to employees' health and safety are covered in Sections 275 to 278.

Sections 279 to 310 contain specific procedures for the care and use of explosives and blasting agents.

Requirements governing the examinations and inspections of mine workings and the shaft are outlined in Sections 311 and 312.

Health and safety requirements and equipment specifications for ladders, sinking equipment, shaft conveyances, cages and steps, hoists and hoisting ropes, are outlined in Sections 313 to 405.

Required procedures to operate a pit or quarry are defined in Sections 406 to 420.

Provisions regarding steam, compressed air and the use of electricity are contained in Sections 421 to 562.

Requirements for the design, installation and maintenance of elevators are outlined in Section 564.

Sections 566 to 596 apply to construction operations on the surface of a mining premises or at a plant.

Section 603 makes special provisions for brine wells and their approval and performance requirements.

Notices, inquests and general responsibilities concerning fatal and non-fatal accidents in or about a mine or plant are contained in Sections 604 to 606.

Written notices required by the owner or agent of a mine or plant regarding hoisting facilities, power supply facilities, ore treatment facilities and mine abandonment are covered in Sections 607-609.

Section 609 specifies the mine and plant engineering plans to be updated on a 6 month basis.

REQUIREMENTS

NAME : Part IX Mining Act

NUMBER : MOL - 6

ACT : Part IX Mining Act

KEY CONTACT : See below

AGENCY : Ministry of Labour

TIMING : Dependent/Independent

MINE TYPES : All

TYPE : Submission/Performance

MINE PHASE : All - primarily
Operation

STATUS : Regulation

SIGNIFICANCE : High - But To
Be Repealed Shortly

CROSS REF. :

The following summarises both the submission and performance requirements under Part IX of this Act. Further clarification is not provided in view of the Act's imminent repeal.

Information required by the Mining Act to be reported Kept on File or Posted

Read the *REGULATIONS* for details of these requirements

Classification of Information	Made Available to Whom	Made Available by Means of	Made Available When	Authority Section
ACCIDENTS WHERE INJURIES ARE SUSTAINED:				
FATAL	Coroner	Telegraph or Telephone Report Form	Immediately	604(1)
"	District Engineer	"	"	604(1)
"	District Engineer	"	Within 3 days	604(1)
One Day Lost Time Accidents	"	"	"	605
ACCIDENTS WHETHER OR NOT INJURIES SUSTAINED:				
Failure of or Accident Involving Hoist or Shaft	District Engineer	Written Report	Within 24 hours	606(1)(a)
Explosion or Fire Involving Air Compressor System	"	"	"	606(1)(b)
Inrush of Water	"	"	"	606(1)(c)
Failure of Bulkhead or Dam (underground)	"	"	"	606(1)(d)
Failure or Incidents re Cranes, Railways, Elect. Equip.	"	"	"	606(1)(e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z)
Fire Underground or Near Entrance to Mine	"	"	"	606(1)(r) & (2)
Premature or Unexpected Explosion or Ignition of Explosives	Rescue Station Supt. (if needed)	Telephone or Telegraph	Immediately	606(1)(f)
Gassing Accident	District Engineer	Written Report	Within 24 hours	606(1)(g)
Occurrence of Inflammable Gas	"	"	"	606(1)(h)
Subsidence or Caving of Workings (Solid-Broken-Fill)	"	"	"	606(1)(i)
ROCK BURSTS	District Engineer	Written Report	24 hours after location	606(3)
START AND FINISH OF OPERATIONS:				
Notice of Construction of Plant Buildings	Chief Engineer and District Engineer	Letter	14 days prior	607(1)(a)
Notice of Installation of Plant and Specifications	"	"	"	341(1), 607(1)(a)
Notice of Electric Power Connection or Reconnection	"	"	"	607(1)(b)
Notice of Commencement of Mining Operations	"	"	Within 14 days	607(1)(c)
Notice of Resumption of Operations	"	"	"	607(1)(c)
(if shut down for month)	"	"	"	"
Closing Down Notice and Statement	"	"	Immediately	607(1)(d)
(Re Fencing—Explosives—Plans—Electric Power Cut off)	"	"	"	"
Disposition of Hoisting Rope, Annual Report, etc.)	"	"	"	"
STATISTICS:				
Employment Returns	District Engineer	Report Form	January 15	607(2) & 608(1)
Annual Report Questionnaire	"	"	February 1	607(2)
Statistical Returns	Deputy Minister	As required	When required	608(1) & (2)
Yearly Mine Plans to date December 31st of year	Chief Engineer	Certified Drawing	March 31	609(6)
Mine Plans and Sections to date of Closing	"	"	Immediately	609(7) & (8)

CURRENT REPORTS:				
Abnormal Conditions (by off-going Boss)	On-coming Boss	Written Report	Before on-coming	312(4) & 307(7)(8)
Fire Procedure	District Engineer	"	Shift starts	175(3)
Stench Gas	Manager	"	Yearly	176(2)
Inflammable Refuse	"	"	Weekly	177(5)
Explosion Storage Inspection	"	"	Monthly	188(6)
Fire fighting Equipment Inspection	"	"	Weekly	288(1)
Original Conveyance Safety Equipment Test	Chief Engineer	"	Monthly	196(3)
Conveyance Safety Equipment Test	Mechanical Engineer	"	As required	324(6)
Detective Explosives	District Engineer	Report Form	Immediately	324(7)(8)(9)(10)
Careless Act in Connection with Explosives	Manager	As required	"	280(4)
"	"	Written Report	"	288(4)
"	District Engineer	As required	"	288(4)
Completion of Work Required by Engineer	Crown Attorney	Letter	"	288(4)
Hoisting Rope Record Sheet	Engineer	Official Form	By date specified	610(1)(a) & 612
Hoisting Rope Slip	Chief Engineer	Send Test Piece	Rope installed	348(5)
Hoisting Rope Test	"	"	Rope removed	348(8)
	"	"	As required	318(1)
	"	"	"	357(1)
RECORDS:				
Hoistman's Log Book	Engineer	Record Book	When required	404
Hoisting Rope Record	"	"	"	348(6)
Hoisting Machinery Record	"	"	"	314(1)
Hoisting Equipment Record	"	"	"	514(3)
Shaft Inspection Record	"	"	"	312(1-5)
Crane Inspection Record	"	"	"	249(12)
Elevators	"	"	"	564(23)
Mine Plans and Sections	"	Certified Drawing	"	609
CERTIFICATES:				
Hoistman's Medical Certificates	"	Doctor's Certificate	Certificate filed	165(3)(4)(5)(6)(7)
Dust Exposure Occupation Certificates	"	Official Certificate	Record posted	165(6)
Boiler Inspection Certificate	"	"	When required	167(2)(14)
Air Receiver Certificate	"	"	Posted	421(2)
Hoisting Rope Certificates (2)	"	"	"	423(2)
Elevators Rated Capacity	"	Initial Test Cert.	As required	348(1)(3)
Plant Registration Certificate	"	Maker's Certificate	"	348(1)(3)
Steam Plant Operator's Certificate	"	Official Certificate	Posted—Always	564(8)
Compressor Operator's Certificate	"	"	"	Operating Engineers Act
POSTERS AND PERMITS:				
Authorized Cage Loads	Posted	Official Poster	"	"
Code of Mine Signals	"	Suitable	"	380(1)
Fire Procedures (Surface and Underground)	"	Official	"	387 & 388
Fire Hazard Areas	"	"	As required	196(2)
Explosive Storage Permits	"	"	Posted—Always	181(3)
Explosive Storage Posters and Signs	"	"	"	181(4)(5)
Emergency Exit Direction Signs	"	Suitable	"	181(14)(15)(16)
Abstract of Rules	"	Official	"	188(8)
	"	"	"	597(3)

ACT : The Silicosis Act

DATE :

R.S.O. 1970 Chap. 438
1971, c.50 s. 78

AGENCY : Ministry of Labour
(since Fall 1976)

RELEVANCE : Minor - to be
repealed shortly

To date regulations made under this Act do not apply to mines although they could be expanded to cover all situations where silica exposure constitutes a potential health hazard. The Act will shortly be repealed and regulations made under Bill 70, on Occupational Health and Safety will likely be similar to those currently under the Silicosis Act and be made applicable to mines.

This Act regulates industrial processes involving silica exposure. A health certificate must be issued to all employees working with processes involving silica exposure. The Minister may require a medical examination for such employees at any time.

The Minister may make regulations defining silica exposure and prescribing schedules for employee medical examinations.

Regulation 799 indentifies the method by which health certificates may be issued and renewed. Unless the employee is unable to attend the medical clinic for a renewed examination, the health certificate must be renewed after 18 months of issuance.

An employer is required to obtain from the employee a health certificate before the commencement of work.

Forms are provided under this regulation for issuance of a health certificate.

REQUIREMENTS

NAME : Silicosis Testing

NUMBER : MOL - 7

ACT : Silicosis Act

KEY CONTACT : Industrial Chest
Disease Service -
Dr. J.J. Vingilis

AGENCY : Ministry of Labour

TIMING : Independent

MINE TYPES : Underground

TYPE : Performance

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Low - Not
Directly Applicable

CROSS REF. :

This Act does not currently apply to mines and likely will not before being repealed. However, new regulations under Bill 70 of the Occupational Health and Safety Act will likely be similar to these.

R.R.O. 1970, Regulation 799 as amended by O. Reg.193/74 establishes testing requirements and reporting forms for individuals subject to silica exposure.

ACT : The Workmen's Compensation Act

DATE :

R.S.O. 1970 Chap. 505;
1971, c.62 and c.98
s.4 Sched. par.37;
1973, c. 46 and c.173;
1974, c. 70;
1975, c. 47;
1977, c. 41, s. 24.

AGENCY : Ministry of Labour

RELEVANCE : Employee/Employer Standards

This Act discusses accidents, disabilities and compensation resulting from and in the course of employment. Certain regulations and standards under this Act apply specifically to mining.

According to Schedule 1, Class 5, owners of mining operations, from the initial stages of prospecting and developing work to the abandonment phase, must contribute to the accident fund. This fund provides for the payment of compensation, outlays and expenses under this Act, the salaries of the commissioners and all expenses arising out of the establishment, maintenance and operation of mine rescue stations.

The rights of the employee and employer are outlined in Part I as well as the schedule for payment of compensation.

In the event of an accident, it is required of the employer to notify the Workmen's Compensation Board within three days of his knowledge of the accident and supply any further information that may be required.

This Act entitles employers, with the approval and under the control of the Board, to form themselves into an association for the purpose of education in accident prevention.

Regulations under this Act define the terms of reference for industries or operations in determining and fixing the percentage, rate or sum to be assessed and levied upon employers.

As defined by Schedule 3 of Regulation 834, an employee is entitled to compensation as a result of an industrial disease. In particular, silicosis caused by the inhalation of silica dust is considered an industrial disease.

First aid requirements and the items required to be contained in the first aid stations are identified in Regulation 6/71. Employers in industries may be required by the Board to maintain such first-aid appliances and services as is considered necessary and may make such order respecting the expense as may be considered.

The employer is required to submit, to the Workmen's Compensation Board on an annual basis, a statement of the amount of the wages earned by all his employees during the past year and the amount that he estimates he will expend for wages during the current year.

REQUIREMENTS

NAME : Accident Fund Payments

NUMBER : MOL - 8

ACT : Workmen's Compensation Act

KEY CONTACT :

Workmen's Compensation Board
Financial Division

AGENCY : Ministry of Labour

Executive Director: R. Brewerton

TIMING: Regular (Annual)

MINE TYPES : All

TYPE: Performance/Submission

MINE PHASE: All

STATUS: Regulation

SIGNIFICANCE: Low

CROSS REF.:

R.R.O. 1970, Regulation 834, Schedule I, Class 5 specifies that mining companies, through all stages of development, are required to contribute to the accident fund which is administered by the Workmen's Compensation Board. The Board will assess, each year, the amount to be contributed to the fund.

REQUIREMENTS

NAME : Posting Information

NUMBER : MOL - 9

ACT : Workmen's Compensation Act

KEY CONTACT : Workmen's Compensation Board - Area Office

AGENCY : Ministry of Labour

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

The employer is required to post all information, including cards or pamphlets, that the Workmen's Compensation Board supplies to him. The information should be posted in conspicuous places within easy access of the employees.

REQUIREMENTS

NAME : Annual Statement

NUMBER : MOL - 10

ACT : Workmen's Compensation Act

KEY CONTACT : Workmen's Compensation Board, Revenue Division
R.D. Reilly

AGENCY : Ministry of Labour

TIMING : Regular (Annual)

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

The employer is required to prepare and transmit to the Workmen's Compensation Board on an annual basis, a statement of the amount of wages earned by all his employees during the preceding year and an estimate of the amount to be expended on wages during the forthcoming year.

REQUIREMENTS

NAME : Notification of Accident

NUMBER : MOL - 11

ACT : Workmen's Compensation Act

KEY CONTACT : Workmen's Compensation Board Claims -
Executive Director W.R. Kerr

AGENCY : Ministry of Labour

TIMING : Dependent (on accident)

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

The employer must notify the Workmen's Compensation Board of an accident involving an employee where the employee is disabled from earning full wages or requires medical aid. The notification, in writing, must include the following:

- (1) the nature and happening of the accident;
- (2) the time of its occurrence;
- (3) the name and address of the employee;
- (4) the place of the accident;
- (5) the name and address of the physician or surgeon by whom the employee was or is attended for the injury.

ACT : The Beach Protection Act, 1971

DATE :

R.S.O. 1970 Chap. 40
1971, c.50, s.11

AGENCY : Ministry of Natural Resources

RELEVANCE : Obtaining Construction
Material from Shore Zone

A licence is required for the taking of sand from the bed, bank, beach, shore or waters of any lakes, rivers, or streams. This licence is particular to the geographical area of the licensee and shall include specific terms and conditions as to its operation.

Upon application for this licence, the Minister may refer the matter to the Mining and Lands Commissioner for a hearing and a report. A copy of this report would be subject to approval by the Minister before the applicant would receive approval for a licence.

A Royalty fee may be required in addition to the licence fee if the sand is to be removed from Crown land. The Minister may fix the amount to be charged for every yard of sand removed under the authority of the licence.

REQUIREMENTS

NAME : Sand Removal Approval

NUMBER : MNR - 1

ACT : Beach Protection Act

KEY CONTACT : Regional Director

AGENCY : Ministry of Natural Resources

TIMING : Regular (requires
monthly return)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

An application for a licence to take sand required under this Act may require additional information including; a plan of the area in which the licensee will operate; an indication of the nature and extent of the deposit; the depth of water covering the deposit; and the proposed method of taking sand.

Under R.R.O. 1970, Regulation 68, the individual licensed to take sand must make a return on or before the tenth of each month showing the quantity of sand taken during the previous month.

ACT : The Beds of Navigable Waters Act

DATE : R.S.O. 1970,
Chap. 41

AGENCY : Ministry of Natural Resources

RELEVANCE : Tenure of Lands
Under Water

This Act specifies that where land borders a navigable body of water, that in the absence of an expressed grant of it, the bed of such body of water was not intended to pass to the grantee. Notwithstanding the provisions of this act the Lieutenant Governor in Council may deal with special cases as he considers fair and just.

This Act does not apply to the bed of the river in Lot 8 in the 6th Concession of Meritt Township, District of Sudbury.

ACT : The Conservation
Authorities Act

DATE :
R.S.O. 1970 Chap. 78
1971, c. 64,
1972, c. 1, s.84
1973, c. 98.

AGENCY : Ministry of Natural Resources

RELEVANCE : Relevant Only in Areas of
Ontario Regulated by Authorities

The objectives of an authority are to establish and undertake a programme to further the conservation, restoration, development and management of natural resources other than gas, coal and minerals.

The authority has power to :

- determine a programme to conserve, restore, develop and manage the watershed
- purchase, lease or expropriate land
- erect works and structures
- to control surface water flow, alter river courses.

Subject to approval of the Lieutenant Governor in Council, the Authority may make regulations

- restricting or regulating use of river water
- prohibiting or regulating the construction of any building or structure in any area subject to flooding during a regional storm
- prohibiting or regulating placing or dumping of fill of any kind which may affect the control of flooding or pollution or conservation of land

ACT : The Endangered Species Act

DATE : 1971, Chap. 52

AGENCY : Ministry of Natural Resources

RELEVANCE : Damage to Endangered
Fauna or Flora

No person shall willfully:

- (a) kill, injure, interfere with or take any species of
fauna or flora
- (b) destroy or interfere with the habitat of any species
of fauna or flora

declared by the regulations to be threatened with extinction.

REQUIREMENTS

NAME : Habitat Protection	NUMBER : MNR - 2
ACT : Endangered Species Act	KEY CONTACT : District Manager
AGENCY : Ministry of Natural Resources	TIMING : Dependent
MINE TYPES : All	TYPE : Submission
MINE PHASE : Exploration, Development	STATUS : Regulation
	SIGNIFICANCE : Usually low - in rare cases could be very significant
	CROSS REF. :

Habitats for the following species (common names only given) must not be disturbed under regulations made pursuant to the Act.

Fauna

Blue Racer	Piping Plover
Timber Rattlesnake	Eskimo Curlew
Peregrine Falcon	Golden Eagle
Bald Eagle	White Pelican
West Virginia White Butterfly	Mountain Lion (Eastern Cougar)
Lake Erie Island Water Snake	Kirtland's Warbler

Flora

Small White Lady's Slipper Orchid

ACT : The Forest Fires Prevention Act

DATE :

R.S.O. 1970 Chap. 179
1971, c. 50, s. 41;
1973, c. 14;
1974, c. 22.

AGENCY : Ministry of Natural Resources

RELEVANCE : Fires, Work, Travel

The Act is directed at prevention of forest fires in Ontario and regulates the use of outdoor fires, travel and work in fire districts in the Province.

The Act applies only to the fire districts outlined in Appendix A of Regulation 354. These districts are:

Chapleau	Kemptville	North Bay	Sudbury
Cochrane	Kenora	Parry Sound	Swastika
Fort Frances	Lake Huron	Pembroke	Thunder Bay
Geraldton	Lake Simcoe	Sault Ste Marie	Tweed
Kapuskasing	Lindsay	Sioux Lookout	White River

Permits are required for any outdoor fire for any purpose other than cooking or obtaining warmth during the fire season which is the period April 1 to October 31. Fire permits expire with the fire season.

The Minister may declare any fire district or part thereof to be a restricted fire zone or a restricted travel zone for any period. Use of outdoors fires in a restricted fire zone is severely limited. Travel in a restricted travel zone is also limited and allowed only upon issuance of a forest travel permit. Such permits also expire with the fire season.

A work permit is required for any mining operation, land clearing, construction of a dam, bridge or camp, or carrying on operations liable to cause the accumulation of slash or debris within 1000 feet of a forest or woodland. Such permits expire on March 31 following date of issue. As a prevention measure an area of at least 100 feet surrounding a mine must be cleared of all flammable debris in areas located within 1000 feet of a forest or woodland.

Provided a fire permit has been obtained, bush, debris, non-merchantable timber and flammable material cut or accumulated from land clearing must be burned.

Sections 24 to 33 of this Act stipulate several fire causing offences prohibited during the fire season or close to forests or woodlands.

Regulation 354 identifies assigned fire districts in Ontario, required fire equipment according to the number of men on site, and submission forms for a fire permit, forest travel permit and work permit.

REQUIREMENTS

NAME : Fire Permits

NUMBER : MNR - 3

ACT : Forest Fires Prevention Act

KEY CONTACT : District Manager

AGENCY : Ministry of Natural Resources

TIMING : Regular (annual
permit)

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.: MIG - 1

Permits are required for all fires during the period from April 1 to October 31 (fire season), other than for cooking or warmth in the defined fire districts identified in R.R.O. 1970, Regulation 354.

Such permits are to be renewed annually and are in the form presented in R.R.O. 1970, Regulation 354, Form 1.

REQUIREMENTS

NAME : Forest Travel Permit

NUMBER : MNR - 4

ACT : Forest Fires Prevention Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Regular (limited duration - all expire by Oct 31)
TYPE : Submission

MINE TYPES : All

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Moderate - Could
limit summer access

CROSS REF.:

In a restricted travel zone of a fire district (identified in R.R.O. 354) a permit is required for virtually all travel.

These permits are for limited duration and in all cases expire at the end of the fire season (October 31).

These permits are as per Form 2, R.R.O. 1970, Regulation 354.

REQUIREMENTS

NAME : Work Permit

NUMBER : MNR - 5

ACT : Forest Fires Prevention Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Regular (all expire
March 31)

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF.: MNR - 13

A work permit is required for any mining or other operation within 1,000 feet of a forest or woodland located within the fire districts as identified in R.R.O. 1970, Regulation 354. These permits expire on March 31 following the date of issue.

The application for a work permit is as per Form 3, R.R.O. 1970, Regulation 354 and the permit issued will be as per Form 4 of these regulations.

ACT : The Industrial and Mining Lands
Compensation Act

DATE: R.S.O. 1970,

AGENCY: Ministry of Natural Resources

RELEVANCE : Agreement Concerning
Damage Compensation

By the authority of this Act, the owner or operator of a mine is permitted to make an agreement with the owner or lessee of any land for payment for any damage or injury resulting or likely to result to the land from the operation of the mine or the mine workings.

The payment of compensation therefore affords a complete answer to any action that may be brought for damages or for an injunction in respect of any matter for which compensation has been made.

ACT : The Lakes and Rivers Improvement
Act

DATE :

R.S.O. 1970, Chap. 233
1971, c. 50, s. 50.

AGENCY : Ministry of Natural Resources

RELEVANCE : Dam Construction
Affecting Water

The purpose of this Act is to provide for the regulation of lakes and rivers regarding the use, management and perpetuation of the fish, wildlife and other natural resources dependant on such waters. Provisions are made for ensuring the suitability of the location and the nature of improvements on lakes and rivers, including the efficient and safe maintenance and operation.

Approval is required for the construction or alteration of a dam on any lake or river. The Minister must first approve the location of the dam and subsequently approve, in writing, plans and specifications of the proposed works. Section 10 identifies supporting information to accompany this application for approval.

The Minister may order the owner of a dam or other structure to repair, reconstruct or remove it.

The Act prohibits the deposition of any substance, refuse or matter of any kind into a lake, river or shore.

REQUIREMENTS

NAME : Dam Approval

NUMBER : MNR - 6

ACT : Lakes and Rivers
Improvement Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF.:

Approval is required for the location of any dam on a lake or river. The application should be accompanied by plans, specifications and other documentation on headpond, flooding, duration of project.

REQUIREMENTS

NAME : Unsightly Deposition
of Waste

NUMBER : MNR - 7

ACT : Lakes and Rivers Improvement Act

KEY CONTACT : District Manager

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

The deposition of trees, refuse, substance or matter in a lake, river or shore which impairs the natural beauty is prohibited and the Minister may order subsequent clean up.

ACT : The Mining Act
(excluding Part IX)

AGENCY : Ministry of
Natural Resources

RELEVANCE : Principal Mine
Related Statute

DATE :
R.S.O. 1970 Chap. 274
1971, c. 50, s.58,
c. 98, s.4, Sched. p.22
and c. 102
1972, c. 4, s.17 and
c. 116
1973, c. 106

This Act is the principal statute regulating mineral development in Ontario. The Act is subdivided into fourteen parts all of which except Part IX are administered by the Ministry of Natural Resources. Part IX (currently under extensive revision) is administered by the Ministry of Labour. The following summary covers the principal requirements under this Act excluding Part IX which is covered separately.

No person or company not the holder of a prospector's licence shall prospect for minerals upon Crown lands or lands in which the Crown holds mineral rights, or stake out, record or acquire any unpatented mining claim or area of land for boring permit or acquire any right or interest therein. The prospector's licence expires on March 31st after date of issue. No licensee shall apply for or hold more than one such licence.

A licensee (holder of a prospector's licence) may stake out a mining claim on any land open for prospecting subject to the requirements of this Act (Sections 37 to 43 cover limits on staking). Section 56 prescribes staking procedure.

Mining claims are invalid if staked out during the time which the Fire District is closed under the Forest Fires Prevention Act.

Before beginning any work on a mining claim a work permit under the Forest Fires Prevention Act is required.

The holder of a prospector's licence who has staked out a mining claim shall furnish the mining recorder with information given in Section 60 for recording within thirty-one days of staking.

Where a claim has been on record for sixty days or more the recorder may issue a certificate of record provided certain requirements are met.

Minimum work requirements, consisting of stripping, opening up mines, sinking shafts or other actual mining operations, must be performed within 5 years of recording a mining claim. Sections 85 and 86 outline the schedule of these work requirements.

Where good reason is provided, a holder may obtain extensions of time to do work and reinstatement of a claim forfeited due to failure to comply with work requirements.

The Minister may reserve for the Crown the sand and gravel located on an unpatented mining claim. The holder of an unpatented mining claim is not liable to assessment or taxation for municipal or school purposes.

The staking out, filing of an application for, or the recording of a mining claim does not confer on a licensee any right to take minerals, sand, gravel, stone, or any other mineral found in, upon or under the claim, except for testing purposes.

The holder of a mining claim does not have any right, title or claim to surface rights other than the right to enter upon, use and occupy such parts as are necessary for the purpose of prospecting and efficient development and operation of mines and minerals therein.

The holder of an unpatented mining claim has the right prior to any subsequent right to the surface rights.

Compensation to surface rights holders is provided for in Section 101.

A licensee may abandon a mining claim at any time by giving written notice in the prescribed form to the mining recorder.

If the prospector's licence has expired, all interest of the holder of a mining claim, before it is brought to lease, ceases.

Upon compliance with the Act, as outlined above, and upon payment of the rent for the first lease year, the holder of a mining claim is entitled to a 21 year lease of the claim. The application and payment for a lease may be made to the mining recorder at any time after completion of the work requirements but not later than one year from the date upon which all such work on the mining claim is required to be performed. The application shall be accompanied by the certificate of record and a certificate of the completed performance of required work for the mining claim.

Prior to issuance of a lease for a mining claim in unsurveyed territory, it is required to have the land surveyed by an Ontario land surveyor at the expense of the applicant.

The Minister may require a survey of a mining claim in surveyed territory at the expense of the applicant for a lease.

Where the Minister is satisfied that any terrain, due to paucity of rock outcrops or for any other reason, cannot be prospected or explored by other than geophysical or other technical methods, he may issue an exploratory licence of occupation to prospect and explore any such area for a period of three years, subject to the conditions specified in Section 656. The area for which a licence

may be issued shall be in one parcel and shall not be greater than 64,000 acres. This procedure replaces the more usual staking and assessment work sequence described above.

If a deposit of mineral is found by the holder of an exploratory licence of occupation issued under Section 656 and the deposit is, in the opinion of the Minister, of economic importance, the licensee is entitled to apply for a lease comprising not more than 10% of the area for which the licence is issued.

In special circumstances, an exploratory licence of occupation may be issued under Section 646(2) of the Act without limitation as to size and location.

Where the holder of a mining lease produces evidence, satisfactory to the Minister, that he is producing mineral in substantial quantities and production has been continuous for more than one year, he is entitled, upon application in writing and upon surrender of his lease, to patent of the lands or mining rights held under the lease. Application for a patent is to be in the prescribed form.

When the lessee or owner of the mining rights requires the use of surface rights lying within or outside the limits of the lands for which he has a lease, for purposes of disposal of tailing or waste material or for other mining purposes, the Minister may lease to him any available surface rights under Section 106.

All patents or leases issued under this Act contain a reservation for road purposes. Ten percent of the surface rights of the land granted or leased shall be reserved for the Crown or its officers to lay out and construct roads when considered necessary.

Crown timber and the right to enter upon any leased or patented land is also reserved under the issue of any lease or patent subject to this Act.

No person can remove stone or rock for any industrial or commercial purpose unless he holds a quarry permit. This permit expires in one year unless otherwise stated on the permit. Application for this permit may need to include plans on proposed site development. The holder of this permit must keep detailed records of his operation and report amounts removed and pay royalty, if applicable, on a monthly basis.

All ores or minerals raised or removed from the lands under the lease or patent shall be treated and refined in Canada so as to yield refined metal or other products suitable for direct use in the arts without further treatment. Where this requirement is not feasible, exemption may be granted by Order-in-council.

Any apparatus or equipment that may be used for the refining, retorting, smelting, assaying or treating of any mineral or substance for the purpose of recovering or determining the quantity of gold, platinum, silver or any other precious metal requires a refinery licence as issued by the Minister.

Site plan approval is required for the construction of a plant for smelting, roasting or refining of ore which may result in the release to the air of sulphur, arsenic or other fumes that cause damage to vegetation.

By order of the Commissioner, the licensee may obtain approval for rights over other lands for the working of the mine or the mill for treating ore or quarry. Section 645 identifies the approvals that may be obtained and the compensation required for damage to that land.

REQUIREMENTS

NAME : Prospector's Licence

NUMBER : MNR - 8

ACT : Mining Act

KEY CONTACT : District Office
and Mining Recorder

AGENCY : Ministry of
Natural Resources

TIMING : Regular (Annual)

MINE TYPES : All (U Special)

TYPE : Submission

MINE PHASE : Prospecting

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. : AECB - 1
For uranium

Forms to apply for a prospector's licence are presented in R.R.O. 1970, Regulation 605 as amended by O. Reg 583/76. Applications by a company shall utilize Form 2 (R.R.O. 1970 Regulation 605) and by an individual shall use Form 1.

Renewal applications shall use Form 5 or 6 for an individual or company respectively. Licences expire on March 31.

The renewal licence for a person having held one for 25 consecutive years is as per Form 9.

REQUIREMENTS

NAME : Exploratory Licence
of Occupation

ACT : Mining Act

AGENCY : Ministry of
Natural Resources

MINE TYPES : All

MINE PHASE : Prospecting and
Exploration

NUMBER : MNR- 9

KEY CONTACT : Mining Recorder

TIMING : Dependent

TYPE : Submission on
Tender Basis

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Regulations for obtaining an exploratory licence of occupation for prospecting and exploration are contained in Section 656 of the Act.

Exploratory licences of occupation are also issued under Section 646 (2).

REQUIREMENTS

NAME : Recording of Mining Claim

NUMBER : MNR - 10

ACT : Mining Act

KEY CONTACT : Mining Recorder

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF.:

Forest Fires Prevention Act
and Mining Act Section 58

To record a mining claim information must be provided on the location of the claim, time staked and other information contained in Section 60 of the Act. These data are to be submitted using Form 10 in R.R.O. 1970, Regulation 605.

REQUIREMENTS

NAME : Surveys of Mining Claims

NUMBER : MNR - 11

ACT : Mining Act

KEY CONTACT : Mining Recorder

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

Immediately after surveying of every mining claim, the surveyor must forward information by registered mail to the Surveyor General. The detailed requirements are appended.

REGULATION 609

under The Mining Act

SURVEYS OF MINING CLAIMS

FILING OF SURVEY RETURNS

1. Immediately after the completion of every survey of a mining claim, the surveyor shall deliver or forward by registered mail to the Surveyor General, by his official title, his returns of survey as specified by section 3. R.R.O. 1960, Reg. 445, s. 1.

INSPECTION OF SURVEYS

2. All surveys of mining claims are subject to inspection and, in the event of the work not being found correct and in compliance with this Regulation, the surveyor shall make such amendments as are ordered by the Surveyor General. R.R.O. 1960, Reg. 445, s. 2.

RETURNS OF SURVEY

3. The following returns of survey of a mining claim shall be forwarded to the Surveyor General:

1. One certified copy of the field notes on durable tracing linen.
2. One certified copy of the plan of each individual claim on durable tracing linen.
3. One certified copy of the application to record and sketch
4. A tabulated list, certified correct, of the prospector's posts bearing legible markings at the time of survey, and of all survey posts and, in the absence of survey posts, a brief description of the manner in which the survey corner was re-established.
5. A tabulated list of latitudes and departures
6. A metes and bounds description of each mining claim situated in a subdivided township
7. Where a mining claim is situated in a township lot of a subdivided township or recorded as an aliquot part of a mining location, paragraph 4 does not apply. R.R.O. 1960, Reg. 445, s. 3.

4. The following returns of survey of a mining claim shall be forwarded to the mining recorder.

1. One white or blue print of the field notes.
2. Two copies of the plan of each individual claim on durable tracing linen

3. A metes and bounds description of each mining claim situated in a subdivided township. R.R.O. 1960, Reg. 445, s. 4

SURVEYS

5. The scale of the plan and field notes shall vary between five to ten chains to an inch, depending on the size of the claims and the detail to be shown. R.R.O. 1960, Reg. 445, s. 5.

6. Where a group of claims is surveyed, the field notes may be shown on one compiled plan, if the plan does not exceed an area of five square feet. R.R.O. 1960, Reg. 445, s. 6.

7. Measurements shall be shown in chains and decimals of a chain. R.R.O. 1960, Reg. 445, s. 7.

8. The direction of the surveyed lines shall be shown by astronomical bearings, referred to the reference meridian passing through the centre of the township but, where a mining claim is not situated in a township, the bearings shall be referred to a reference meridian through the point of observation. R.R.O. 1960, Reg. 445, s. 8.

9.—(1) In every group, or connected group of mining claims, six or more in number, whether surveyed at one time, or at different times by the same surveyor, an astronomical observation for azimuth shall be taken and, where the group exceeds twelve in number, a check observation for azimuth shall be made for each multiple of twelve claims.

(2) Where the group is less than six in number, the bearings may be referred to a previously surveyed line, claim or parcel of record in the Department, if the bearings shown are reliable. R.R.O. 1960, Reg. 445, s. 9.

10. The surveyor shall mark out the boundaries of the mining claim by blazing the adjacent trees on three sides, one blaze on the face of the tree on the direction of the line and one blaze on each face of the tree at right angles to the direction of the line, the lines being well cut out and straight between survey posts. R.R.O. 1960, Reg. 445, s. 10.

11.—(1) The surveyor shall plant at each angle of the claim a metal post not less than five-eighths of an inch square or three-quarters of an inch in diameter and not less than eighteen inches in length, with the number of the post permanently marked thereon together with the recorded number and letter or letters of the claim and shall also plant at each metal post a durable wooden post, not less than four inches square and thirty-six inches in length marked in the same manner as the metal post.

(2) Where, owing to physical features, it is not practicable to plant a post at the true corner of the claim, a witness post shall be planted in lieu thereof and marked "W.P." together with the number of the post, recorded number of the claim and letters pertaining thereto. R.R.O. 1960, Reg. 445, s. 11.

12. The marks on the survey posts and bearing trees shall be made in a neat and workmanlike manner with a sharp knife or scribing iron. R.R.O. 1960, Reg. 445, s. 12.

13. Where available, each survey corner shall be referenced by two bearing trees, preferably at right angles to the survey post, and the measurements shall be made from the blaze to the survey post. R.R.O. 1960, Reg. 445, s. 13.

14. The survey of a mining claim shall be connected with a previously surveyed claim, parcel, line or traverse post of record in the Department if the survey is within a radius of two miles, and in other cases, the surveyor shall select a prominent point at which to plant a permanent post. R.R.O. 1960, Reg. 445, s. 14.

15. Where a mining claim is composed partly of land and partly of land under water, the normal or average high-water mark shall constitute the boundary. R.R.O. 1960, Reg. 445, s. 15.

DATA TO BE SHOWN ON FIELD NOTES

16.—(1) Survey posts, bearing trees, observations, scale, north point, adjacent claims surveyed or unsurveyed, streams, roads, power or telephone lines, surveyed lines and the connections made thereto and the high-water mark shall be shown on field notes, and traverses shall be made of all lakes and rivers situated within the limit of the mining claim, and all traverse lines shall be shown in a good quality of vermilion ink and the measurements and bearings of the traverse and boundary lines shall be shown in black india ink.

(2) The title of the field notes shall mention each claim number surveyed and the township or area, together with the district in which the claim is situated.

(3) The following certificate shall appear on the field notes:

"I hereby certify that I have carefully examined the ground included in Mining Claim No., surveyed by me and have otherwise made all reasonable investigations in my power to ascertain if there was any other subsisting claim conflicting therewith and I certify that I found no trace or indication and have no knowledge or information of any such claim except as follows: (if none, so state; if any, give particulars)."

Ontario Land Surveyor.

R.R.O. 1960, Reg. 445, s. 16.

DATA TO BE SHOWN ON PLANS

17.—(1) The title on the plan shall mention the claim number, the township or area, together with the district in which the claim is situated and, where a mining claim is composed of a part of a township lot or recorded as being an aliquot part of a mining location, the title shall first mention the township lot or mining location and then the recorded mining claim number.

(2) The measurements, bearings and boundary lines shall be shown in black india ink and the boundary lines shall be outlined in a light red colour.

(3) All streams, roads, power or telephone lines, surveyed lines and the connections thereto shall be shown, and a water line shall be shown around the shores of all lakes and rivers but the traverse thereof need not be shown.

(4) The adjacent mining claims shall be shown and if the adjacent claim is not surveyed, the words "not surveyed" shall also be shown.

(5) The scale and north point shall be shown on the plan together with the following certificate:

"I hereby certify that the foregoing plan is correct and is prepared from actual survey performed under my own personal supervision and that I was personally present throughout the progress of the survey."

Ontario Land Surveyor

R.R.O. 1960, Reg. 445, s. 17.

AREAS

18. The area of a mining claim shall be computed to two places of decimals and, where a claim is composed partly of land and partly of land under water, or partly in two townships, separate areas shall be computed. R.R.O. 1960, Reg. 445, s. 18.

LIMIT OF ERROR

19. The closing error of a surveyed mining claim shall not exceed a ratio of 1 in 2,000, or the square root of the sum of the squares of the closing error in latitude and departure shall not exceed four links in a standard size claim of twenty chains square. R.R.O. 1960, Reg. 445, s. 19.

DUTY OF SURVEYOR BEFORE COMMENCING SURVEY

20.—(1) Except as herein provided, no survey shall be made within a distance of fifteen miles in a straight line from the recorder's office without the written consent or direction of the recorder or of the Commissioner, or of the Minister or Deputy Minister,

and, before proceeding with the survey, the surveyor shall examine the application and sketch or plan of the claim or certified copies thereof.

(2) Where a claim is fifteen miles or more in a straight line from the recorder's office, and where the surveyor has not applied for the consent or direction under subsection 1, the surveyor may survey the claim, but, before he signs the certificate required by section 16, he shall in all other respects follow the procedure under subsection 1 and shall, in addition to his survey, file with the recorder a sworn statement setting out the circumstances under which the survey was made without the consent referred to in subsection 1. R.R.O. 1960, Reg. 445, s. 20.

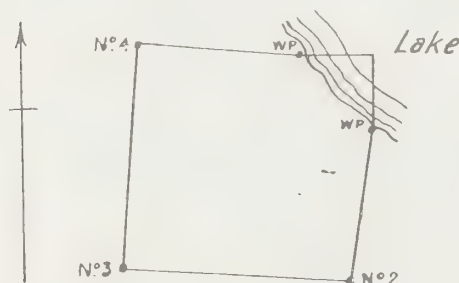
METHOD OF SURVEY

21.—(1) In surveying a mining claim in unsurveyed territory, the surveyor shall establish the boundaries of the claim by running straight lines from the No. 1 post at the northeast angle of the claim to the No. 2 post at the southeast angle thereof, from the No. 2 post to No. 3 post at the southwest angle thereof and from No. 3 post to No. 4 post at the northwest angle thereof, and from No. 4 post to No. 1 post and, where two mining claims are shown as having a common boundary in whole or in part, the boundary of the prior subsisting claim governs.

(2) In establishing the boundaries of a mining claim in unsurveyed territory where, owing to the nature and conformation of the ground, the true angle or angles of the claim could not be posted, and the position thereof is indicated by witness posts as illustrated in each of the diagrams hereto, the surveyor shall follow the method described in the note to the diagram, having due regard to prior subsisting claims and to subsection 2 of section 119 of the Act.

(3) The posts as shown by the diagrams hereto are located on the ground by survey. R.R.O. 1960, Reg. 445, s. 21.

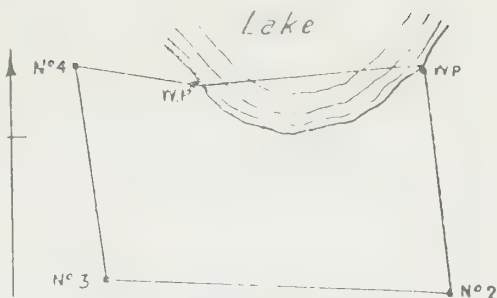
DIAGRAM No. 1



NOTE

Draw a line north astronomically from the witness post on the east boundary to intersect a line drawn east astronomically from the witness post on the north boundary.

DIAGRAM No. 2

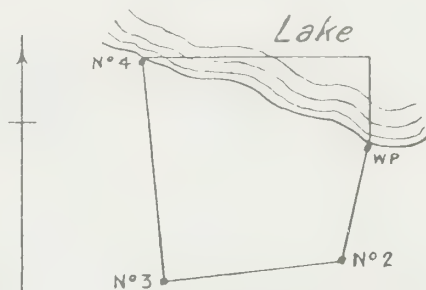


NOTE

EXPLANATION: The prospector's sketch indicates the position of the witness posts as shown by Diagram No. 1.

PROCEDURE: Accept witness post on the east boundary as the No. 1 post and join in a straight line to the witness post on the north boundary

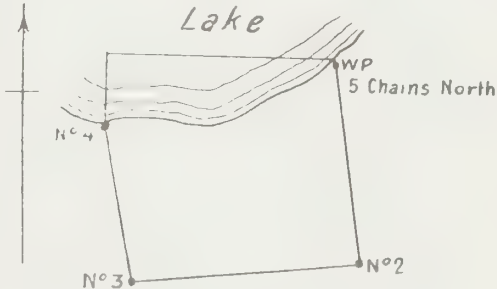
DIAGRAM No. 3



NOTE

Draw a line north astronomically from the witness post on the east boundary to intersect a line drawn east astronomically from the No. 4 post.

DIAGRAM No. 4



NOTE

EXPLANATION: The prospector's sketch indicates the position of the witness posts as shown by Diagram No. 3.

PROCEDURE: Accept the witness post on the east boundary as the No. 1 post and draw a line west astronomically from this point to intersect a line drawn north astronomically from the prospector's No. 4 post.

REQUIREMENTS

NAME : Report of Work

NUMBER : MNR - 12

ACT : Mining Act

KEY CONTACT : Mining Recorder

AGENCY : Ministry of
Natural Resources

TIMING : Regular (annual re-
ports required for 5 years)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration, Development

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF.: MNR - 5 and
Mining Act
Section 47

Under the terms of a mining claim a minimum level of work must be performed totalling at least 200 days during the first five years as specified in Section 85 of the Act.

A report must be submitted by the holder of the mining claim not later than ten days after the end of each year. The report is to use Form 17 presented in R.R.O. 1970, Regulation 605.

REQUIREMENTS

NAME : Patent or Lease Application

NUMBER : MNR - 13

ACT : Mining Act

KEY CONTACT : Mining Recorder

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration, Development

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

Application for a patent or mining lease is to use Form 20,
R.R.O. 1972, Regulation 605.

REQUIREMENTS

NAME : Quarry Permit Application

NUMBER : MNR - 14

ACT : Mining Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Regular (requires
monthly report)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High for pit
operations.

CROSS REF.:

Under Section 127 a quarry permit is required for all stone or rock quarrying for industrial or commercial purposes.

Application for such permits is to use Form R.R.O. 1970, Regulation 605.

Monthly returns are required for holders of these permits under Section 131.

Under Section 131 of the Act, a monthly return must be made on or before the tenth of every month showing the quantity and destination of material taken or removed in the preceding month.

Such reports are to use Form 27, R.R.O. 1970, 605.

REQUIREMENTS

NAME :	Refinery Licence Application/ Renewal	NUMBER :	MNR - 15
ACT :	Mining Act	KEY CONTACT :	Information and Mineral Statistics Section Gary Weatherson
AGENCY :	Ministry of Natural Resources	TIMING :	Dependent
MINE TYPES :	All	TYPE :	Submission
MINE PHASE :	Operation	STATUS :	Regulation
		SIGNIFICANCE :	Moderate
		CROSS REF. :	

Under Section 629 of this Act, a licence is required to operate a refinery. The application for a refinery licence is to be as per Form 1, O. Reg. 162/74.

The application for a renewal of a refinery licence is to be as per Form 2 in O. Reg. 162/74.

Application for a refinery exemption (generally not applicable to projects) is to be as per Form 3.

REQUIREMENTS

NAME : Notice of Abandonment

NUMBER : MNR - 16

ACT : Mining Act

KEY CONTACT : Mining Recorder

AGENCY : Ministry of
Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Abandonment of
Mining Claim

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF.:

Under Section 92 of the Act, notice must be given to the mining recorder of intention to abandon a mining claim.

Notification in duplicate is to be by means of Form 19, R.R.O. 1970 Regulation 605.

ACT : The Pits and Quarries
Control Act

DATE: 1971, Chap. 96

AGENCY: Ministry of Natural Resources

RELEVANCE : Pits and Quarries in
Designated Areas

This Act establishes requirements regulating the removal of gravel, sand, stone, earth, clay or fill by means of open excavation to supply material for construction, industrial or manufacturing purposes. This Act applies only to certain parts of Ontario, as designated in Regulation 268/77. These areas are generally in Southern Ontario but include areas around Sudbury.

By this Act "pit" includes a place where minerals are removed.

An application must be filed with the Minister for a licence to open, establish or operate a pit or quarry and must be accompanied by a site plan to include all requirements outlined in Section 4 of this Act. The Minister may refer the application to the Ontario Municipal Board for a hearing.

Upon approval of the application, the licensee is subject to annual review by the Ministry to assess compliance with this Act, the regulations, site plan and terms and conditions of the licence. Included in the conditions of the licence is the requirement of a deposit for a rehabilitation program.

Regulations under this Act (O.Reg. 545/71, O.Reg. 107/72, O.Reg. 268/77 Schedule) provide the applications required to open, establish or operate a pit or quarry and identify the parts of Ontario in which the Act applies.

The provisions of this Act are in addition to Part IX of the Mining Act.

No quarry operations in the Amabel or Lockport formations are allowed closer than 300 feet from the Niagara escarpment.

REQUIREMENTS

NAME : Pit Opening and Operating
Licence

NUMBER : MNR - 17

ACT : Pits and Quarries Control Act

KEY CONTACT : District Manager

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : Open Pit also for
aggregate supplies

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High for open
pit operations

CROSS REF. :

An application for a licence to open, establish or operate a pit or quarry is to be on Form 1 as presented in O. Reg 545/71.

The licence issued will be as per Form 3 of these regulations.

An application for the licence shall be accompanied by a site plan in quadruplicate and include:

- (a) the location, true shape, topography, contours, dimensions, acreage and description of the lands set aside for the purposes of the pit or quarry;
- (b) the use of all land and the location and use of all buildings and structures lying within a distance of 500 feet of any of the boundaries of the lands set aside for the purposes of the pit or quarry;
- (c) the location, height, dimensions and use of all buildings or structures existing or proposed to be erected on the lands set aside;
- (d) existing and anticipated final grades of excavation, contours where necessary and excavation set backs;

- (e) drainage provisions;
 - (f) all entrances and exits;
 - (g) as far as possible, ultimate pit development, progressive and ultimate road plan, any water diversion or storage, location of stockpiles for stripping and products, tree screening and berming, progressive and ultimate rehabilitation and, where possible, intended use and ownership of the land after the extraction operations have ceased;
 - (h) cross-sections where necessary to show geology, progressive pit development and ultimate rehabilitation;
- and
- (i) such other information as the Minister may require or as is prescribed by the regulations.

In addition, the site plan is to be certified by a registered professional engineer.

REQUIREMENTS

NAME : Public Notice For Pit
or Quarry Operation

NUMBER : MNR - 18

ACT : Pits and Quarry Control Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Dependent

MINE TYPES : All and Aggregate
Pit or Quarry

TYPE : Performance

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

After filing an application to open and operate a pit or quarry,
the applicant must publish notice using Form 5 of O. Reg 545/71.

Public notice of the application is required by advertising in two
successive issues of at least one daily or weekly local newspaper.

REQUIREMENTS

NAME : Pit and Quarry
Operating Requirements

ACT : Pits and Quarries Control Act

AGENCY : Ministry of
Natural Resources

MINE TYPES : Open Pit and Aggregate
Pits and Quarries

MINE PHASE : Operation, Abandonment

NUMBER : MNR - 19

KEY CONTACT : District Manager

TIMING : Dependent

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

There are several performance requirements for pits and quarries as detailed in O. Reg. 545/71. These pertain to:

- security deposits
- rehabilitation
- topsoil stockpiling
- screening with trees
- site use
- security
- explosive use

ACT : The Provincial Parks Act

DATE :

R.S.O. 1970. Chap. 371
1971, c. 16;
1972, c. 1, s.87 and
c. 27;
1976, c. 56

AGENCY : Ministry of Natural Resources

RELEVANCE : Restrictions on Mining in
Provincial Parks

Subject to the regulations, prospecting and the staking out of mining claims or the development of mineral interests or the working of mines in provincial parks is prohibited.

A licence of occupation may be issued under the regulations to the recorded holder of a lawfully staked mining claim in a provincial park.

The staker or recorded holder of a mining claim or the holder of a licence of occupation issued to the recorded holder of a mining claim does not acquire any right, title or interest in or to the surface rights in the land.

Where it is necessary to interfere with the surface rights in any such land in order to carry on mining operations, the district manager or superintendent in charge of the provincial park in which the land is may permit such interference with the surface rights as he considers necessary.

There are no regulations under this Act.

ACT : The Public Lands Act

DATE : R.S.O. 1970 Chap.380
1971, c. 46;
1972, c.4, s.19 and
c. 29;
1975, c.65

AGENCY : Ministry of Natural Resources

RELEVANCE : Disposition of Public Lands

The Minister may define zones such as "open, deferred, closed" within public lands, and each class of zone may be administered for the purposes defined for the designated zone.

The Minister may issue a licence of occupation to any person who has purchased or is permitted to occupy or is entrusted with the care or protection of any public lands or who has received or been located on any public lands as a free gift.

The Minister may grant easements in or over public lands for any purpose.

Any building or thing remaining on lands after the revocation, cancellation or expiration of the sale, or lease of the lands or the licence of occupation is the property of the Crown.

This Act prohibits the deposition of any material upon public lands whether or not covered with water or ice or both without written consent from the Minister.

In the case of lands patented after May 6, 1913 mines and minerals pass to the patentee unless expressly reserved in the letters of patent.

The Minister or Deputy Minister may issue a certificate as to the issue of letters of patent with respect to any lands, mines or minerals and every such certificate shall be recorded in the proper registry or land titles office.

All lands patented or disposed of after April 12, 1917 are subject to the condition that all ores or minerals shall be treated and refined in Canada.

Every patent, lease or licence of occupation issued under this Act may reserve a portion of the surface rights to the Crown.

In all sales, free grant locations, leases, licences of occupation, mining claims or other dispositions of public lands or mining lands or mining rights the Crown reserves the right to construct on the land any roads, reservations for wood, gravel or other materials without making compensation. The Minister may also reserve from sale any water power or land so required.

Regulations under this Act pertain to the sale or lease of public lands for a summer resort location, the extension of the sale or lease of public lands and the fee for the licence of occupation or a land use permit.

REQUIREMENTS

NAME : Land Use Permits

NUMBER : MNR - 20

ACT : Public Lands Act

KEY CONTACT : District Manager

AGENCY : Ministry of
Natural Resources

TIMING : Regular (annual
permits)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

By O. Reg. 688/76 the district manager may issue land use permits allowing public lands in his administrative district to be occupied subject to terms of the Act. These are annual permits.

REQUIREMENTS

NAME : Waste Disposal on
Public Lands

NUMBER : MNR - 21

ACT : Public Lands Act

KEY CONTACT : District Manager

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

No material may be deposited on public lands whether or not they are covered with water or ice, without approval.

REQUIREMENTS

NAME : Abandonment of Facilities	NUMBER : MNR - 22
ACT : Public Lands Act	KEY CONTACT : District Manager
AGENCY : Ministry of Natural Resources	TIMING : Dependent
MINE TYPES : All	TYPE : Performance
MINE PHASE : Abandonment	STATUS : Regulation
	SIGNIFICANCE : Moderate
	CROSS REF. :

All facilities remaining on public lands after the revocation, cancellation or expiration of a sale or lease of the lands or the licence of occupation, become the property of the Crown.

ACT : The Wilderness Areas Act

DATE : R.S.O. 1970,
Chap. 498

AGENCY : Ministry of Natural Resources

RELEVANCE : Mineral Development
Restrictions

The Lieutenant Governor in Council may set apart any public lands as wilderness areas for preservation in their natural state, protection of flora and fauna or improvement of the area.

Nothing in this Act or Regulations limits or affects the development or utilization of the natural resources in any wilderness area more than 640 acres in size.

Regulation 828 amended by O.Reg 225/72 sets out wilderness areas. The following have an area of less than 640 acres :

<u>Wilderness Area</u>	<u>Location</u>
Hilton Township	Algoma District
Michipicoten	" "
New Brunswick House	" "
Old Brunswick House	" "
Abitibi Lake	Cochrane
Old Fort Albany	"
Sankey Township	"
Kiskebus Lake	Frontenac County
Tickell	Hastings
Derby Lake	Kenora District
Echo Township	" "
Jones Road	" "
Massacre Island	" "
Sioux Mountain	" "
Sutton Lake Gorge	" "
White Otter Lake	" "
Rondeau	Kent County
Pinery	Lambton
Crater Lakes	Manitoulin District

Wilderness Area (cont.)

McCrae Lake
Turkey Point
Presqu'ile Islands
Blair Township
Timber Island
Shoal Lake
Eighteen Mile Island
Fairey Point
Agate Island
Bat Cave
Outer Barn Island
Richardson Harbour Island
Sleeping Giant
Lac La Croix

Location (cont.)

Muskoka District
Norfolk County
Northumberland County
Parry Sound District
Prince Edward County
Rainy River District
Sudbury District
" "
Thunder Bay District
" " "
" " "
" " "
" " "
" " "

ACT : The Mining Tax Act

DATE :

R.S.O. 1970 Chap. 275
1971 c. 14;
1972 c. 140 sup;
1974 c. 132

AGENCY : Ministry of Natural Resources

RELEVANCE : Taxes

Taxes accrue on the last day of the taxation year and amounts must be in the hands of the Ministry not later than two months following close of the taxation year.

Every mine with a profit greater than \$100,000 in a taxation year is liable to a tax as specified.

The operator of every mine shall within ten days after commencement of active operation give written notice to the mine assessor. Notice must also be given of every discontinuance.

No mineral substance can be removed until the mine assessor has been notified of mining commencement.

On or before the last day of the month that ends six months following the close of the taxation year every mine operator must deliver to the mine assessor a return containing the estimate of his tax.

Every mine must keep proper books of account.

The Lieutenant Governor in Council may remit the tax on profits from mining of iron ore where he is satisfied that the ore is smelted in Canada.

REQUIREMENTS

NAME : Notice of Mine Operation

NUMBER : MNR - 23

ACT : Mining Tax Act

KEY CONTACT : Mine Assessor
F.Hall

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

The mine assessor must be notified of every change in the name or address of any operator, owner, holder, tenant and occupier of the mine.

No mineral substance or any product thereof can be shipped or removed by any person until the Notice of Active Operation has been submitted.

REQUIREMENTS

NAME : Tax Payment

NUMBER : MNR - 24

ACT : Mining Tax Act

KEY CONTACT: Mine Assessor
F. Hall

AGENCY : Ministry of Natural Resources

TIMING: Regular (Annual Submission)

MINE TYPES: All (Iron, Gold and Uranium are Special Cases)

TYPE: Submission

MINE PHASE: Operation

STATUS: Regulation

SIGNIFICANCE: High

CROSS REF.:

Every mine operator is liable to pay a tax under the Mining Tax Act. Imposed taxes accrue on the last day of the taxation year (fiscal year) and the estimated total amount must be in the hands of the MNR no later than two (2) months after the close of the taxation year.

The mine operator must submit to the mine assessor a complete tax return within six (6) months of the close of the taxation year. Any discrepancy between the return and the previously submitted estimate must be paid with the return.

The Ontario mining tax is a non-deductible progressive tax ranging from 0% on the first \$100,000 of mining profits to 40% on mining profits over \$40,000,000. The following summarizes the tax structure:

$$\text{Tax Due} = (\text{Tax Rate}) (\text{Profit})$$

Where:

$$\text{Profit} = \text{Sales} - \text{Costs} - \text{Depreciation} - \text{Exploration and Development Allowance} - \text{Process Allowance}.$$

Sales = Gross receipts from the sale of product from mining and processing operations during the taxation year.

Costs = All costs incurred in Canada such as:

mine related scientific research conducted in Canada, salaries and operating expenses, certain insurance and charitable and educational donations. No allowance can be made for finance costs, royalty payments or depletion.

Depreciation: For new mining plants, machinery, equipment and buildings the depreciation allowance in each taxation year will not exceed 30% per year. For other, older than April 9, 1974, mining plant machinery, equipment and buildings the depreciation allowance in each taxation year is 15% per year. For process plant and equipment the depreciation allowance is a rate up to 15% straight line.

Exploration and Development Allowance: Up to 100% of E & D expenses prior to production and all E & D expenditures in Ontario after operation can be considered an E & D Allowance.

Processing Allowance: For processing facilities owned by the mine operator, a processing allowance is made on the processing assets. The allowance varies with the degree of processing and its location. The rates are:

PLACE PROCESSING OCCURS

<u>Degree of Processing</u>	<u>Northern Ontario</u>	<u>Rest of Canada</u>	<u>Outside Canada</u>
(1) Concentrating	8	8	0
(2) Smelting + (1)	16	16	0
(3) Refining + (2)	30	20	0
(4) Semi-Fabricating + (3)	35	20	0

This allowance is not less than 15% or greater than 65% of the combined mine-mill profit.

Tax Rate: The tax rate varies depending upon mining income (profit) as follows.

Profit	Marginal Tax Rate (%)
\$ 0 - \$ 100,000	0
100,000 - 1,000,000	15
1,000,000 - 10,000,000	20
10,000,000 - 20,000,000	25
20,000,000 - 30,000,000	30
30,000,000 - 40,000,000	35
> 40,000,000	40

Taxes paid to a municipality under Section 28 of The Assessment Act are deductible from taxes liable under the Mining Tax Act.

Special consideration is given in the Mining Tax Act to iron, gold and uranium mines. Details are presented in the relevant sections of the regulations.

REQUIREMENTS

NAME : Accounting Records

NUMBER : MNR - 25

ACT : Mining Tax Act

KEY CONTACT : Mine Assessor
F. Hall

AGENCY : Ministry of
Natural Resources

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Every mine operator must keep a complete set of proper books of account showing the quantity, weight, value, composition and other data. These books are to be kept near the mine. These books are also to show the returns from the mill, smelter or refinery and all receipts derived from the sale of the mine's output.

The number and character of these account books may be determined by the mine assessor.

REQUIREMENTS

NAME :	Notice of Discontinuance	NUMBER :	MNR - 26
ACT :	Mining Tax Act	KEY CONTACT :	Mine Assessor F. Hall
AGENCY :	Ministry of Natural Resources	TIMING :	Dependent
MINE TYPES :	All	TYPE :	Submission
MINE PHASE :	Abandonment	STATUS :	Regulation
		SIGNIFICANCE :	Low
		CROSS REF. :	

The operator of every mine must give prompt notification to the mine assessor of every discontinuance of active operation of the mine.

Notice must be given to the mine assessor of every recommencement of mine operations after discontinuance.

ACT : The Game and Fish Act

DATE :

R.S.O., 1970 Chap. 186
1971, c. 30;
1973, c. 108 and c. 174

AGENCY : Ministry of Natural Resources

RELEVANCE : Minor Only - Concerning
Habitats

Except with the written authority of the Minister, no construction camp or mining camp shall mention on a bill of fare or serve any game (gamebird or fur bearing animal) other than that which has been propogated or sold under licence.

No person shall take, destroy or possess the eggs or nests of any game bird without written authority from the Minister.

Except under licence to hunt or trap fur bearing animals no person shall molest, damage or destroy

- (a) a den or usual place of habitation of a fur-bearing animal other than fox or skunk
- (b) a beaver dam

The ownership of the bed of a navigable water or lake or river does not include the exclusive right of fishing in waters over the bed unless that exclusive right is granted by the Crown.

REQUIREMENTS

NAME : Activities Affecting
Habitat

NUMBER : MNR - 27

ACT : Game and Fish Act

KEY CONTACT :

AGENCY : Ministry of Natural Resources

TIMING : Dependent

MINE TYPES : All

TYPE : Performance/Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

No land use alterations or construction activities may destroy beaver dams, fur-beaver habitats or nests of game birds without permission.

ACT : The Assessment Act

AGENCY : Ministry of Revenue

RELEVANCE : Exemption of Mining
Properties

DATE :

R.S.O. 1970. Chap 32;
1971, c. 79 and c. 98,
s.4, Sched. par. 3;
1972, c. 1, s.89,
c. 111, s.14, c.125
and c. 161;
1973, c. 26 and c. 148;
1974, c. 41;
1975, (2nd sess.), c. 2;
1976, c. 65;
1977, c. 56.

As defined in this Act "land" includes all mines, minerals, quarries in and under the land as well as all buildings, structures upon, in, over or under the land.

All real property in Ontario is liable to assessment and taxation with numerous exclusions including buildings plant and machinery under or on mineral land to the extent that they are used for mining. Also all minerals other than peat, or structural materials are exempt.

Every person occupying mineral land for the purpose of any business other than mining is liable to business assessment.

ACT : The Provincial Land Tax Act

DATE :

R.S.O. 1970 Chap. 370
1971, c. 50, s.70;
1972, c. 1, s.91
1973, c. 135

AGENCY : Ministry of Revenue

RELEVANCE : Exemption of Mining
Properties

As defined in this Act "land" includes all mines, minerals, quarries in and under land as well as all structures, buildings in, upon, or under the land.

All land situated in territory without municipal organization is liable to assessment and taxation with land liable for the acreage tax under The Mining Act among lands excluded. Such lands are excluded unless the land or any part of it is used for a purpose other than mining or if it is used for any other purpose.

ACT : The Bridges Act

DATE : R.S.O. 1970, Chap.50

AGENCY : Ministry of Transportation
and Communications

RELEVANCE : Bridges over Rivers

This Act applies to every stream or river where its bed is vested with the Crown and every place upon a river or stream where the Province is a riparian owner.

No bridge or other structure shall be built, placed or constructed over or across any river or stream or part thereof, nor can the structure be rebuilt, replaced or altered where the cost will exceed \$2,000 without approval of the Lieutenant Governor in Council.

The Lieutenant Governor in Council may approve a work upon receiving:

- a) a petition for approval
- b) proof that plan of the bridge or alterations has been deposited with MTC and the proper registry or land titles office
- c) proof that notice of such application has been published for three successive weeks in The Ontario Gazette and in two local newspapers

REQUIREMENTS

NAME : Bridge Approval

NUMBER : MTC - 1

ACT : Bridges Act

KEY CONTACT : 1. District
Engineer and, 2. Approvals
Section-K.L. Kleinsteinber

AGENCY : Ministry of Transportation
and Communication

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Approval is required for all bridges valued at over \$2500 or all modifications exceeding this amount. Plans and specifications prepared by a professional engineer must be submitted with the application. Design criteria must be approved by the District Office of MTC.

The "AASHO" code must be adhered to for bridge approval.

The "building code for bridges" currently in draft form will replace the AASHO code for engineering design and construction. The new code is expected to be finalized in Spring, 1980.

ACT : The Occupational Health and
Safety Act, 1978

DATE : 3rd Reading
December, 1978

AGENCY : Ministry of Labour

RELEVANCE : Mining Health and Safety

Current to the time of writing, this Act and the regulations under this Act are not in force. The summary of the Act outlined below is complete and will not undergo further changes. The regulations are currently under review and pertain to four general areas; Mining, Industrial, Construction and Occupational Health and Safety requirements. When this Act comes into force the following Acts will be repealed :

- The Construction Safety Act, 1973
- The Industrial Safety Act, 1971
- The Industrial Safety Amendment Act, 1972
- The Industrial Safety Amendment Act, 1974
- Part 1X of the Mining Act (except sections 176, 611, 616)
- The Silicosis Act, 1970
- Section 78 of the Civil Rights Statute Law Amendment Act, 1971
- The Employees Health & Safety Act, 1976
- Section 10 of the Ministry of Labour Act

An attempt is made to identify approval and performance requirements of the mining health and safety regulations from the second reading copy of May, 1978. Changes are occurring to these regulations and will be updated in this report as soon as practical.

This Act and the regulations identify the responsibilities of owners, constructors, employers and employees in all matters pertaining to health and safety requirements in and about a project or work place, specifically a mine.

Initial contact must be made with the Ministry prior to planning pre-development work on a mining project. A feasibility report and all drawings, plans and specifications should be submitted to the district mining engineer for review.

The Act stipulates the selection of a health and safety representative by the constructor where the number of employees regularly exceeds twenty. In addition, specific projects may require a joint health and safety committee to be established. The requirements and powers of this committee are outlined in Section 8.

Section 12 authorizes the Lieutenant Governor to assess and levy an additional sum upon employers to defray expenses incurred from the administration of this Act. These monies would be added to the expenses levied by the Workmen's Compensation Act.

Part III of the Act outlines the responsibilities of the employer and employee concerning health and safety measures, equipment, material, and employment standards.

The owner of mine is required to maintain and update drawings, plans, or specifications on a six month basis. Prior to any construction, development or alteration to a work place, an owner or employer is required to submit to the Ministry for review any drawings or specifications of the proposed plan.

When a biological, chemical or physical agent is intended to be used in a work place and that substance may endanger the health of a worker the employer may have restrictions imposed by the Ministry as to its use or conditions for use. Such conditions imposed for the use of this substance must be posted and a copy of the order supplied to the committee, health and safety representative and trade union.

In a situation of a work place where an employee has reasonable cause to believe that a machine, device or thing is unsafe to use or operate or is likely to endanger himself or another worker, the employee may refuse to work. Upon refusal to continue working, the employee shall report the circumstances of the matter to his employer, who is required to investigate the report in the presence of either a health and safety representative, a committee member who represents employees, or a person authorized by a trade union that represents the employee.

In the event of a fatal accident at a work place, the committee, health and safety representative and trade union must be notified immediately. In addition, a written report of the occurrence must be sent to the Ministry within forty-eight hours after the occurrence.

Part VII also includes other requirements for notification during a hazardous situation in or near the work place or injury occurring to workers.

Part VII identifies the duties and powers of the ministerial inspector who is appointed under the authority of this Act. Where an inspector finds that a provision of this Act or the regulations are being contravened, he may order the owner or employer to comply with the Act and regulations within such a period of time as is specified by the order.

The Lieutenant Governor in Council may make regulations pertaining to the health and safety of persons in or about a work place.

REQUIREMENTS

NAME : Pre-Development Review

NUMBER : MOL - 12 (Pending)

ACT : The Occupational Health and
Safety Act, 1978 (pending)

KEY CONTACT :

District Mining Engineer

AGENCY : Ministry of Labour

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

Prior to beginning any construction, development, reconstruction, alteration, addition or installation to a mine or plant, the owner or employer must notify the district mining engineer. Drawings, layouts and specifications may be required by the engineer for review. The engineer will acknowledge in writing receipt of these drawings, within five days. The engineer shall inform the owner of a mutually acceptable date, not to exceed sixty days of receiving the review material, for the review to be completed. Upon completion of review, discussions may be initiated between ministerial staff and the project owner to suggest alternate methods of conforming to health and safety regulations, codes, standards and guidelines. The Ministry has the authority to only make suggestions prior to operation, once the mining operation has commenced, the Minister's authority extends to issuing stop orders when compliance with the act and regulations is neglected.

REQUIREMENTS

NAME : Health and Safety

NUMBER : MOL - 13 (Pending)

ACT : The Occupational Health and
Safety Act, 1978 (pending)

KEY CONTACT :

(1) Mining Health and Safety
Branch Director: P.B. McCrodan

AGENCY : Ministry of Labour

(2) District Mining Engineer

TIMING: Dependent

MINE TYPES : All

TYPE: Submission/Performance

MINE PHASE: All - mainly operation

STATUS: Regulation

SIGNIFICANCE: Moderate

CROSS REF.:

The owner must:

- (1) Select a Health and Safety Representative from among the non-managerial workers, where the number of workers regularly exceeds twenty and must provide the health and safety representative with information or assistance that may be required to carry out his duties.
- (2) Where the exposure limit of a biological, chemical or physical agent is prohibited, regulated, restricted, limited or controlled by a regulation the employer shall establish a joint health and safety committee.
- (3) The constructor or employer must keep the names and work locations of committee members posted at the work place.
- (4) Employers will be required to pay monies to the Workmen's Compensation Board for the administration of this Act.
- (5) Prior to commencing any work on a project, the constructor or owner must notify the director in writing and supply any information as prescribed by the regulation.

(6) The employer is responsible for:

- (a) providing the equipment, materials and protective devices as prescribed in the regulations;
- (b) ensuring that these devices are used as prescribed;
- (c) ensuring that standards are met for floors, roofs, walls, pillars, supports and other parts of the work place as set out in the Building Code Act, 1974.

(7) The employer is required to:

- (a) Provide information, instruction and supervision to protect the health and safety of a worker.
- (b) Acquaint the workers and supervisors with any hazards in the work place.
- (c) Employ a person who is of the age as prescribed in the regulations.
- (d) Post a copy of this Act and explanatory material in the work place outlining the rights, responsibilities and duties of the workers.
- (e) As prescribed by the regulations, establish and maintain an occupational health service.
- (f) Keep and maintain records of the handling, storage, use and disposal of biological, chemical or physical agents outlined in the regulations.
- (g) Notify the Director of the use of introduction of such agents.

- (h) Monitor these agents and keep and post accurate records.
 - (i) Where standards have been set for biological, chemical or physical agents, comply with the standards.
 - (j) Only permit a worker to work if the medical examinations required have been met.
 - (k) Provide a worker with written instructions for his health and safety where outlined in the regulations.
- (8) The owner of a mine must update drawings, plans and specifications at least every six months.
 - (9) Prior to construction, development, reconstruction, alteration, addition or installation to a work place, the owner must file the drawings, plans or specifications with the Ministry for review.
 - (10) The owner must keep a copy of the reviewed drawings at or near the work place.
 - (11) The employer must provide a copy of any order by a Director concerning the limitations of biological, chemical or physical agents to the committee, health and safety representative or trade union, if any, and post the order in the work place.
 - (12) Where an employee has refused to work due to a hazardous situation, the employer must investigate the report in the presence of the worker, and a committee member or health and safety representative.
 - (13) An Inspector must be notified if the worker continues to refuse work following the initial investigation. The Inspector will give a written decision to the employee concerning his investigation.

- (14) Pending the investigation the employer must inform another worker of the hazardous situation before the work is assigned.
- (15) Because a worker has acted in compliance with this Act, an employer is prohibited to do the following:
 - (a) dismiss a worker;
 - (b) discipline or suspend a worker;
 - (c) impose a penalty upon a worker;
 - (d) intimidate or coerce a worker;
- (16) The constructor or employer must notify an Inspector, committee member and health and safety representative (within 48 hours) when a person is seriously injured or killed.
- (17) Where an accident is non-fatal or non-serious, or where a worker has an occupational illness, the employer must give notice in writing to a Director, a committee member, and a health and safety representative, within four days of the occurrence.

ACT : The Environmental Protection
Amendment Act, 1978

DATE: Pending

AGENCY: Ministry of The Environment

RELEVANCE : Spill Prevention,
Cleanup and Restoration

The proposed legislation deals with the discharge of a pollutant into the natural environment out of the normal course of events. Proposed measures are outlined to deal with its related prevention, cleanup, restoration and the liability for loss or damage arising out of the spill.

The person who has control of the pollutant and who causes the spill would be required to notify the appropriate authorities and take remedial action, physically and technically, to deal with the spill.

Persons responsible for the spill would incur all reasonable costs and expenses of carrying out remedial action in accordance with an order or direction of the Minister.

ACT : The Aggregates Act

DATE: Pending

AGENCY: Ministry of Natural Resources

RELEVANCE : Pits and Quarries

This new legislation will draw from the current legislation "The Pits and Quarries Control Act" and will include designated crown land. Under the authority of the Act, the Ministry will have more operating control over the licensed pits and quarries.

The Bill is expected to pass first reading in the Spring of 1979.

ACT : The Mining Tax Amendment
Act, 1978

DATE : 3rd Reading
Dec. 13, 1978

AGENCY : Ministry of Natural Resources

RELEVANCE : Revised Mine Taxation

In this Act a new term "social asset" is developed meaning assets ancillary to mining relating to housing, recreational and service facilities for employees. The expenses for these are deductible under Subsection 3, Section 3, Clause (e) of the original act.

An allowance for depreciation on a new mining or major expansion for arm's length acquisitions of machinery and plant is allowed. This depreciation allowance is not to exceed the lesser of (a) annual profits from new mine expansion or (b) undepreciated capital cost.

No allowance for depreciation of social assets is allowed.

Special allowances for depreciation of uranium projects to fulfill contracts for Ontario Hydro are provided.

The new Act also increases the powers of the mine assessor to assess properties.

ACT : The Environmental Assessment
Amendment Act

DATE : Possibly Pending

AGENCY : Ministry of the Environment

RELEVANCE : Limitation on Designated
Projects

It is anticipated that legislation will be introduced shortly which limits the applicability of The Environmental Assessment Act. Under the possible new legislation, no project will fall under the Act unless specifically designated. Such an amendment would significantly reduce the applicability of the Act particularly for public sector projects.

ACT : The Gasoline Handling
Amendment Act

DATE: Pending

AGENCY: Ministry of Consumer and
Commercial Relations

RELEVANCE : Handling and Storage of
Volatile Fuels

Revisions to the Gasoline Handling Act are currently under review by the Ministry of Consumer and Commercial Relations. Information on the content of the revised sections is not publicly available although these amendments are expected to receive first reading shortly.

ACT : The Ontario Minerals
Conservation Act, 1978

DATE : May 11, 1978
1st Reading
Bill 88 (Private
Members Bill)

AGENCY : Minerals Management Board

RELEVANCE : Mineral Management Agreement-
Unlikely that this Act will be
passed.

This Act is intended for the conservation and management of the province's resources. All mineral production operations would need to be licensed by the Ontario Minerals Management Board (OMMB) which this Act establishes.

No person shall produce a mineral in Ontario unless he is the holder of a producing licence issued by the OMMB. The licence will not be valid for a period greater than five years. A licence application shall be accompanied by a minerals management plan giving a detailed description of the applicant's proposed production including:

- description of production site
- level and rate of production
- minerals and grades
- sales commitments and amount under contract
- names and locations where shipments are likely to be made
- concurrent mineral exploration

A production activity report during operations must be filed with OMMB every six months giving:

- amount of minerals and grades produced
- volume of sales
- amount and type of minerals purchased by each purchaser and where shipped
- selling price
- inventory level of minerals at the end of the month
- reserve estimates

A yearly report shall be filed with the OMMB containing:

- forecast of production requirements, cost of production, selling price for the next six month period
- summary of previous six month exploration and development activity

ACT : The Mining Lands Act

DATE: Pending

AGENCY: Ministry of Natural Resources

RELEVANCE : To Replace The Mining
Act (Excluding Part IX)

Currently The Mining Act (excluding Part IX) is being rewritten by the Ministry of Natural Resources and will hence be called the Mining Lands Act.

Changes will occur throughout most sections of The Mining Act although no new major areas are expected to be introduced.

4. FEDERAL STATUTES AND REQUIREMENTS

4. FEDERAL STATUTES AND REQUIREMENTS

All Federal statutes have been perused to determine their relevancy to the licensing of mineral resource developments in Ontario. Those Acts directly affecting mine licensing were examined in detail generally using the office consolidation copy and are summarized in this chapter. Regulations and guidelines from these Acts, or normally used by relevant government agencies, are presented immediately following the statute summary.

Statutes which are directly applicable to mining as a business activity distinct from others are included while those of general applicability to business enterprises in Ontario are not presented. In certain cases statutes and regulations affecting all types of businesses are particularly applicable to mining and are identified in Section 4.1.

Specific requirements affecting mineral resource development have been classified on three major bases relating to timing, type and status and are identified by Ministry.

Timing

Timing will generally be one of four types:

1. Dependent on mine phase or action or should be considered at a particular point to ensure minimum delays at a later time
2. Independent of mine phase or action
3. Regular repetitive requirements which are independent of actions; these generally are to be met on a regular basis, monthly, annually, etc.
4. At times requested by the government

Type

Regardless of their timing such requirements are generally of two types:

1. Submissions: These require information or applications to be submitted. In many cases there is a government review time and subsequent issuing of a permit. However, frequently submissions are to be made and no response is anticipated.
2. Performance: These are levels of attainment that must or should be met. They may be necessary to retain a permit but may be distinct from the permit application.

Status

There are two basic levels into which requirements can be classified:

1. Regulation: These are requirements which must be met to adhere to the law. Regulations can be obtained directly from the statute or from regulations published subsequent to the statute.
2. Guidelines: These requirements do not legally require compliance. However, adherence to them is strongly encouraged by the regulatory agency.

The requirements presented in this chapter have been classified according to a specific mining phase. For licensing purposes five phases of mining activity are recognized.

Mine Phase

1. Prospecting: This includes the search for mineral occurrences, geochemical work, test pits and diamond drilling to shallow depths.
2. Exploration: This phase includes the determination of the extent of mineralization and includes detailed mapping, trenching, deeper diamond drilling, overburden stripping, drifts and diamond drilling below the surface.
3. Development: This phase includes engineering design, economic analyses, bulk sampling and opening of open pit or underground works.
4. Operation: This phase is the production of products.
5. Abandonment: This phase is the cessation of all operations, reclamation and abandonment of the project.

4.1 GENERALLY APPLICABLE STATUTES

<u>ACT</u>	<u>RELEVANCE</u>
Canada Business Corporations Act	An Act to revise and reform the law applicable to business corporations incorporated to carry on business throughout Canada.
Canada Corporations Act	An Act regulating the formation and operation of corporations in Canada with and without share capital.
Combines Investigation Act	An Act to provide for the investigation of combines, monopolies, trusts and mergers.
Corporations and Labour Unions Returns Act	Relevant regulations SOR/63-9. An Act to provide for the reporting of financial and other statistics relating to the affairs of corporations and labour unions carrying on activities in Canada.
Customs Act (Customs Tariff)	An Act regarding the importation of goods into Canada and tariffs.
Export and Import Permits Act	An Act respecting the export and import of strategic and other goods.
Foreign Investment Review Act	Discussed in detail in the text.
Income Tax Act	An Act respecting individual income tax.
National Building Code of Canada	Adherence to this code is required in Part IX of The Mining Act.
Unemployment Insurance Act	An Act respecting unemployment payments.

4.2 ATOMIC ENERGY CONTROL BOARD

ACT : The Atomic Energy Control Act

DATE : R.S.C. 1970,
c. A-19

AGENCY : Atomic Energy Control Board

RELEVANCE : Sets up AECSB and its mandate

This Act sets up the AECSB and delimits the role of its officers and the powers of the board.

The Board with the approval of the Governor in Council may make regulations:

- (i) respecting mining and prospecting
- (ii) regulating the production, import, export, transportation, refining, possession, ownership, use or sale of any thing which may be used for the production, use or application of atomic energy.

REQUIREMENTS

NAME : Prospecting Approval

NUMBER : AECB - 1

ACT : Atomic Energy Control Act

KEY CONTACT : Safeguards and
Nuclear Materials Branch
Director - J.W. Beare

AGENCY : Atomic Energy Control Board

TIMING : Dependent

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Prospecting,
Exploration

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. : MNR - 8

Under the Atomic Energy Control Regulations a licence is required from the AECB to prospect for uranium unless such activities involve the removal of less than 10 kilograms of uranium from any one deposit in any one calendar year. Approval time for this application is 2 - 4 weeks. Approval is essentially a formality enabling AECB to monitor those prospecting for uranium, controlled primarily at the Provincial level (MNR-8).

After staking of a prospect which contains more than 0.05% by weight of uranium, a report must be submitted to the AECB.

REQUIREMENTS

NAME :	Surface Exploration Permit	NUMBER :	AECB - 2
ACT :	Atomic Energy Control Act	KEY CONTACT :	Safeguards and Nuclear Materials Branch Director - J.W. Beare
AGENCY :	Atomic Energy Control Board	TIMING :	Regular (requires annual submissions)
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	Exploration	STATUS :	Regulation
		SIGNIFICANCE :	Moderate
		CROSS REF.:	AECB - 3

Any person intending to carry out detailed exploration work for uranium (i.e. work beyond the prospecting stage such as extensive surface work, diamond drilling, test pitting or preliminary underground work) must obtain a permit. Such a permit may be a Surface Exploration Permit or Underground Exploration Permit.

The holder of a Surface Exploration Permit is required to submit to the AECB within the first 6 months of each calendar year a report in duplicate giving information on

- ownership of firm
- uranium resource information including trenching and test pitting, surficial geological surveys and drilling results
- health and safety policies and procedures

REQUIREMENTS

NAME :	Underground Exploration Permit	NUMBER :	AECB - 3
ACT :	Atomic Energy Control Act	KEY CONTACT :	President-AECB and 2. Uranium Mines Division Mgr. - A.B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	Exploration	STATUS :	Regulation
		SIGNIFICANCE :	High
		CROSS REF.:	AECB - 2

The AECB has carefully defined their interpretation of the five mining phases used in this licensing document: The definition used by AECB to cover underground exploration includes "stripping of the overburden, driving exploration drifts, raises and inclines, sinking shafts and diamond drilling from below the surface".

Application for an Underground Exploration Permit is to state the approval being sought and refer to all documentation submitted in support of the application including all documents previously submitted which are considered relevant for the permit.

The application for an Underground Exploration Permit must include a report outlining the extent of underground exploration to be carried out, describing the radiation protection program to be implemented for workers and the environmental protection program for the exploration phase.

It is expected that 4 - 6 months are required for AECB review before issuance of this permit.

REQUIREMENTS

NAME :	Letter of Intent	NUMBER :	AECB - 4
ACT :	Atomic Energy Control Act	KEY CONTACT :	1. President AECB and, 2. Uranium Mines Division Mgr. - A.B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	Pre-Development	STATUS :	Regulation
		SIGNIFICANCE :	Low
		CROSS REF. :	

The AECB is to be notified as soon as possible in writing of any intent to develop a uranium mine - mill facility. The Letter of Intent is to be sent as early as possible before any formal submissions to the AECB.

The Letter of Intent will usually follow informal discussions between the proponent and AECB. The letter should indicate in general terms the proposed mining and milling methods, location for facilities and an outline of the project schedule.

REQUIREMENTS

NAME :	Site Approval	NUMBER :	AECB - 5
ACT :	Atomic Energy Control Act	KEY CONTACT :	1. President AECB and, 2. Uranium Mines Division Mgr. - A.B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	Development	STATUS :	Regulation
		SIGNIFICANCE :	High - On the most critical approvals.
		CROSS REF. :	AECB - 6 AECB - 7

The AECB defines development as the preparation of an economic mineral occurrence for production including bulk sampling, opening of underground or open pit works to reach the ore body.

Before starting the development phase, approval is required for mine, mill and tailings sites. This approval comes in the form of Site Approval which is one of the most critical licensing stages. An application for the approval is to state the approval being sought and refer to all documentation submitted in support of the application including all documents previously submitted which are considered relevant for this submission.

The application for Site Approval is to be supported by a Site Evaluation Report . The Site Evaluation Report should include a general description of the mine-mill facility, a description of the mine-mill site emphasizing the geological and hydrological features of the proposed location for the waste facilities, an outline of the nature, form and quality of the radioactive waste involved, and a description of the engineered structures for storing the waste.

Consideration should be given to the effects of site-related factors, including the effects of the iron-exchange properties and capacity of the soil, on the movement of radioactive or

chemically toxic material from the waste management facilities into the environment.

The principles behind the measures which will be instituted for assuring the continued protection of the health and safety of the general public after abandonment of the facility should be discussed. Additional information and documentation, related to the overall environmental assessment and review, is to be submitted on demand to the agencies and the public, as designated by the AECB.

Prior to obtaining site approval, the AECB or a provincial agency may request the proponent to conduct a public information program which usually occurs during the AECB review period. Concomitant to this review, the AECB may also review the development or radioactive waste management approval.

Preparation of the site approval submission will take approximately 24 months and AECB review will likely take 12 to 24 months.

REQUIREMENTS

NAME : Development Approval

NUMBER : AECB - 6

ACT : Atomic Energy Control Act

KEY CONTACT : Uranium Mines
Division Mgr. - A. B. Dory

AGENCY : Atomic Energy Control Board

TIMING : Dependent (annual re-
vision to P.S.R. required)

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF.: AECB - 5
AECB - 7

The AECB must issue Development Approval prior to the start of any development and construction of mine related facilities. It is likely that 12 months of AECB review is required prior to issuance of this approval and review may proceed concurrent with Site Approval Review.

A Preliminary Safety Report (P.S.R.) is to be submitted in support of this application for development approval of the mine-mill facility and construction of radioactive waste management facilities. Information in the preliminary Safety Report might be incomplete and be subject to change. The report, nevertheless, should contain sufficient detailed information, specifications and supporting data to enable the AECB to assess whether the mine-mill and associated radioactive waste facilities are being designed such that their construction and operation will conform with the health and safety guidelines and criteria for workers and the public pursuant to the requirements laid down in the Atomic Energy Control Regulations and in any other applicable legislation.

Where design information required in the preliminary Safety Report is not available at the time of writing, the report should describe the criteria and bases being used to develop the required information, or the alternatives being considered.

The schedule for submission of missing information should be given.

During the interval between the granting of construction or development approval and the granting of an operating licence for the mine-mill and associated radioactive waste management facilities, the preliminary Safety Report shall be revised at yearly intervals to reflect the progress of design, development and analytical work. Each such revision shall identify any significant changes in design or intent.

The final Safety Report supporting an application for an operating licence will cover the as-built facilities.

REQUIREMENTS

NAME : Radioactive Waste Management Approval	NUMBER : AECB - 7
ACT : Atomic Energy Control Act	KEY CONTACT : Uranium Mines Division Mgr. - A. B. Dory
AGENCY : Atomic Energy Control Board	TIMING : Dependent
MINE TYPES : Uranium	TYPE : Submission
MINE PHASE : Development	STATUS : Regulation
	SIGNIFICANCE : High
	CROSS REF. : AECB - 5 AECB - 6

Approval is required from the AECB on containment schemes and their design and construction to ensure that the rate of transfer of radioactive material to the environment is acceptably low. Design proposals for such facilities must include a monitoring program and remedial action plans to ensure that any significant release of radioactivity will be detected and the appropriate action taken to limit releases. The long term integrity of these facilities is also reviewed by the AECB to prevent surface and ground water contamination. Tailings containment systems are to be designed by "best practicable technology".

To guide proponents in the selection of waste disposal sites, construction and design considerations as well as site surveillance and site close-out, the AECB has prepared Licensing Document No. 23D, "Facilities For Retention of Uranium Mine-Mill Wastes".

AECB review time for the approval is 12 to 24 months and review may proceed concurrent with Site Approval review.

REQUIREMENTS

NAME :	Mine-Mill Operating Licence	NUMBER :	AECB - 8
ACT :	Atomic Energy Control Act	KEY CONTACT :	Uranium Mines Division Mgr. - A. B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent (in early yrs. will be annual licence only)
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	Operation	STATUS :	Regulation
		SIGNIFICANCE :	High
		CROSS REF. :	

The AECB defines the operation phase as the actual mining and milling activities resulting in the production of marketable products.

The operation of a uranium mine-mill facility and associated waste management facilities requires a Mine-Mill Facility Operating Licence (MFOL) which normally would not be issued until the mine proponent has received all previously required approvals and conformed to all conditions required by the AECB.

The application for a MFOL is to include all supporting documentation. The application should be supported by definitions of operating policies and principles which are to be instituted by the applicant to ensure continued high level of confidence that the facility will be operated in accordance with appropriate health and safety requirements. In addition all policies and principles for protection of public health and safety after abandonment should be defined.

Issuance of a MFOL will normally involve a series of conditions and subsequent requirements to be met by the mine-mill operator.

In the early years of plant operation, mine-mill facility licences are valid for one year only.

REQUIREMENTS

NAME :	Tailings or Residue Removal	NUMBER :	AECB - 9
ACT :	Atomic Energy Control Act	KEY CONTACT :	Uranium Mines Division Mgr. - A. B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Performance/Submission
MINE PHASE :	Operation	STATUS :	Regulation
		SIGNIFICANCE :	Low
		CROSS REF. :	

Any mine-mill tailings or residue confined in the waste management facilities are not to be removed without prior approval from the AECB and any other appropriate agencies.

REQUIREMENTS

NAME : Sales Contracts

NUMBER : AECB - 10

ACT : Atomic Energy Control Act

KEY CONTACT : 1. President AECB
2. Safeguards and Nuclear
Materials Branch Director
J.W. Beare

AGENCY : Atomic Energy Control Board

TIMING : Dependent

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

All domestic and foreign sales contracts for uranium must be submitted to and approved by AECB.

All exports must be prior authorized by AECB.

REQUIREMENTS

NAME : Consignment of Nuclear
Materials

ACT : Atomic Energy Control Act

AGENCY : Atomic Energy Control Board

MINE TYPES : Uranium

MINE PHASE : Operation

NUMBER : AECB - 11

KEY CONTACT : 1. President AECB
2. Safeguards and Nuclear
Materials Branch Director,
J. W. Beare

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Any transfers of uranium concentrates from the mill site are to be to only authorized consignees and such transfers are to be reported to the AECB. Notice to the AECB is to be by means of "Nuclear Material Transfer Report Form 59" in accordance with AECB #1049, "Record and Reporting Requirements for Nuclear Materials".

REQUIREMENTS

NAME : Annual Report

NUMBER : AECB - 12

ACT : Atomic Energy Control Act

KEY CONTACT : Uranium Mines
Division Mgr. - A.B. Dory

AGENCY : Atomic Energy Control Board

TIMING : Regular (annual)

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF.:

Annual Reports must be submitted to the AECB as a condition of a Mine-Mill Operating Licence. The Annual Report is to summarize the operation and performance of the mine-mill and associated waste management facilities. Any changes in procedures or equipment and events which could significantly influence the safety of the public or personnel must be discussed.

The AECB has prepared a detailed guidance document for the content of these Annual Reports.

REQUIREMENTS

NAME :	Health and Safety Hazards	NUMBER :	AECB - 13
ACT :	Atomic Energy Control Act	KEY CONTACT :	Uranium Mines Division Mgr. - A. B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Performance/Submission
MINE PHASE :	Operation	STATUS :	Regulation
		SIGNIFICANCE :	Varies with Severity
		CROSS REF. :	

Any information or events which reveal a significant degradation or weakening of components and systems whose future would significantly increase the probability of a hazard to the health and safety of workers and the public must be promptly reported to the AECB. In the event of a hazardous situation, endangering the health and safety of any person, the AECB must be notified within 24 hours.

REQUIREMENTS

NAME : Worker Exposure Limits

NUMBER : AECB - 14

ACT : Atomic Energy Control Act

KEY CONTACT : Uranium Mines
Division Mgr. - A. B. Dory

AGENCY : Atomic Energy Control Board

TIMING : Independent

MINE TYPES : Uranium

TYPE : Performance

MINE PHASE : All - Mainly Operation

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

The Atomic Energy Control Regulations are made pursuant to the Atomic Energy Control Act and provide the bases for most of the licences and performance requirements specified by the AECB.

The critical requirements under these regulations not covered by licence applications include:

Section 17 (Schedule II) of the Amendments

The dose of ionizing radiation received by any person shall be no greater than specified below or lower as directed by the AECB.

Maximum Permissible Doses

Column I Organ or Tissue	Column II		Column III Female Atomic Radiation Workers of Reproductive Capacity		Column IV
	Atomic Radiation Workers				Any Other Person
	Rems per quarter of a year	Rems per year	Rems per quarter of a year	Rems per year	Rems per year
Whole body, gonads, bone marrow	5	5	1.3	5	0.5
Bone, skin, thyroid	15	30	15	30	3
Any tissue of hands, forearms, feet and ankles	38	75	38	75	7.5
Lungs and other single organs or tissues	8	15	8	15	1.5

Maximum Permissible Exposures To Radon Daughters

Column I Atomic Radiation Workers		Column II Any Other Person
WLM per quarter of a year	WLM per year	WLM per year
2	4	0.4

Where radon daughters means the following short-lived radioactive decay products of radon-222, polonium-218 (radium A), lead-214 (radium B), bismuth-214 (radium C) and polonium-214 (radium C¹).

The Atomic Energy Control Regulations also set out numerous performance requirements for uranium mine-mill facilities including:

Section 11: Records and Inspection

The licensed proponent must maintain all necessary records concerning dosages of workers, operation and maintenance procedure and all medical examination results.

Section 17: Atomic Radiation Workers

Most employees in a uranium mine-mill operation would be classified as atomic radiation workers. The mine-mill operator must notify all workers of this status, ensure that such workers are medically examined and maintain a complete listing of all records.

Section 20: Loss or Theft of Prescribed Substances

Any loss or theft of 'prescribed substances' in a quantity exceeding ten times the scheduled quantity must be reported to the appointed inspector within 24 hours and the AECB be informed in a complete report.

Section 21: Reporting Occurrences

Any occurrence which could result in doses of ionizing greater than permissible must be reported within 24 hours to the appointed inspector and by a complete report to the AECB.

WLM is a Working Level Month defined in SOR/78-58 in terms of exposure to radon daughters for a 170 working hour period.

REQUIREMENTS

NAME : Worker Exposure Guidelines	NUMBER : AECB - 15
ACT : Atomic Energy Control Act	KEY CONTACT : Uranium Mines Division Mgr. - A. B. Dory
AGENCY : Atomic Energy Control Board	TIMING : Regular (quarterly reports)
MINE TYPES : Uranium	TYPE : Performance
MINE PHASE : Operation	STATUS : Guideline
	SIGNIFICANCE : Moderate
	CROSS REF. :

While maximum permissible radiation doses to workers and the general public are regulated, in Atomic Energy Control Regulations, minimization of all exposure is recommended. Inhalation of radon daughters normally constitutes the greatest potential radiation hazard to uranium mine workers.

The AECB as a guideline recommends that uranium mine workers whose cumulative exposure approaches or exceeds 120 WLM be made aware of this exposure on a case-by-case basis.

It is recommended that quarterly reports from each mine for each worker be submitted to the National Dose Registry of the National Health and Welfare Working Group on Dosimetry and include the following.

Occupational Radon Daughters Exposures Routine Quarterly Submission

a) Initial Submission

- Social Insurance Number
- Miners Certificate Number
- Surname
- Given Names
- Previous Surname
- Province or Country of Birth

a) Initial Submission (cont'd)

Country
Sex
Day, Month, Year of Birth
Identification Number of the Mine
Job Classification (Trade)
Previous Employers (if a mine)
Quarter Number and Year
Quarterly Accumulated Dose in WLM (to two decimal places)

b) Second or Subsequent Submission

Mine Identification
Social Insurance Number
Surname
Job Classification (Trade)
Calender Quarter
Year
Quarterly Accumulated Dose in WLM (to two decimal places)

Occupational Radon Daughter Exposures - Past Records

Social Insurance Number
Miners Certificate Number
Surname
Given Names
Previous Surname
Province or Country of Birth
Sex
Day, Month, Year of Birth
Identification Number of the Mine
Job Classification (Trade)
Yearly Accumulated Dose in WLM (to two decimal places)

REQUIREMENTS

NAME : Effluent Release Limits

NUMBER : AECB - 16

ACT : Atomic Energy Control Act

KEY CONTACT : Uranium Mines
Division Mgr. - A. B. Dory

AGENCY : Atomic Energy Control Board

TIMING : Dependent

MINE TYPES : Uranium

TYPE : Performance

MINE PHASE : Operation

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF.: See Fisheries Act
Effluent Require-
ments

The release of radioactive material from the mine-mill facility and radioactive waste management facilities must be such that doses of ionizing radiation received by any member of the public through any viable pathway is as far below the regulated level as reasonably achievable. In view of this guideline the AECB will establish for each facility appropriate design and operation release targets to ensure that such effluents are "as low as reasonably achievable". The resulting control and engineering measures will need to be developed to ensure release targets are met even after abandonment.

REQUIREMENTS

NAME :	Transfer of Ownership Notice	NUMBER :	AECB - 17
ACT :	Atomic Energy Control Act	KEY CONTACT :	Uranium Mines Division Mgr. - A. B. Dory
AGENCY :	Atomic Energy Control Board	TIMING :	Dependent
MINE TYPES :	Uranium	TYPE :	Submission
MINE PHASE :	All	STATUS :	Regulation
		SIGNIFICANCE :	Low
		CROSS REF. :	

The seller of land affected by uranium mining and milling wastes must inform the buyer and the AECB of the nature of the wastes.

REQUIREMENTS

NAME : Abandonment Approval

NUMBER : AECB - 18

ACT : Atomic Energy Control Act

KEY CONTACT : Waste Management
Division Mgr. - J. P. Didyk

AGENCY : Atomic Energy Control Board

TIMING : Dependent

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Abandonment

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. : EC -13

Authorization from the AECB must be obtained prior to decommissioning of the mine-mill facilities. Provisions for abandonment must be made well in advance of suspension or termination of mining and milling activities. All plans for decommissioning and the continued safe operation of the associated radioactive waste management facilities will need to be approved by the AECB and other appropriate agencies.

4.3 DEPARTMENT OF CONSUMER AND CORPORATE AFFAIRS

ACT : Precious Metals Marking Act

DATE : R.S.C. 1970,
c. P-19

AGENCY : Department of Consumer and
Corporate Affairs

RELEVANCE : Quality Marking of
Precious Metals

A precious metal means gold, palladium, platinum and silver.

A quality mark may be applied to an article if it truly and correctly indicates the quality of precious metal.

Where an article is manufactured in Canada there may be applied in accordance with the Minister's order a national mark consisting of a representation of a maple leaf surrounded by the letter "C".

The Governor in Council may make regulations concerning:

- designation of articles
- designation of metals as precious
- prescribing quality marks
- establishing minimum precious metal contents

There have been no cases since 1941 under this Act.

REQUIREMENTS

NAME : Precious Metals Marking Regulations

ACT : Precious Metal Marking Act

AGENCY : Department of Consumer and Corporate Affairs

MINE TYPES : Gold, Silver

MINE PHASE : Operation

NUMBER : DCC - 1

KEY CONTACT : Consumer Fraud Protection - Regional Office Marking Specialist

TIMING : Dependent

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : Very Low

CROSS REF. :

These regulations SOR/73-361 specify the quality markings to be applied to precious metals in Canada and the minimum quality or quantity of precious metals for marking as follows:

These requirements are directed at precious metals sold at the retail level however would regulate all precious metals.

TABLE

Column I	Column II	Column III
Quality Mark	Precious Metal	Minimum Quality or Quantity of Precious Metal
1. The quality of the gold expressed in karats or decimals. Karats may be shown as "karat", "carat", "Karat", "Carat", "Kt.", "Ct.", "K" or "C".	Gold	9 karats
2. "silver", "sterling", "sterling silver", "argent", "argent sterling" or any abbreviation for any of the foregoing or the quality of the silver shown in decimals.	Silver	925 parts by weight in every 1,000 parts pure silver
3. "platinum", "plat." or "platine".	Platinum or an alloy of platinum and iridium or ruthenium	95% or more of the metallic content of the article or part
4. "palladium" or "pall."	Palladium	95% or more of the metallic content of the article or part
5. "palladium" or "pall."	An alloy of palladium and platinum, iridium, ruthenium, rhodium, osmium, or gold	The quantity of palladium and of the alloy must be at least 90% and 95% respectively of the metallic content of the article or part

4.4 DEPARTMENT OF ENERGY, MINES AND RESOURCES

ACT : The Explosives Act

DATE : R.S.C. 1970,
c. E-15, and
amendment R.S.C.
1974-75, c.60

AGENCY : Department of Energy
Mines and Resources

RELEVANCE : Regulates the Importation,
Transportation and Storage
of Explosives

Considerable portions of the Act pertain to a "magazine" which is defined as a storehouse excluding those for mining and quarrying.

The Act gives the Minister power to issue permits for vehicles used for the transportation of explosives.

The Minister may issue permits for the importation of explosives and no person shall import any explosive into Canada without such a permit.

There have been no cases since 1941 under this Act.

REQUIREMENTS

NAME : Uranium Ore Reserve
Assessments

ACT : Atomic Energy Control Act

AGENCY : Energy, Mines & Resources

MINE TYPES : Uranium

MINE PHASE : Operation

NUMBER : EMR - 1

KEY CONTACT : Uranium Resource
Evaluation Section Director

TIMING : At times requested

TYPE : Submission

STATUS : Regulation (AECB)

SIGNIFICANCE : Low

CROSS REF. :

Under Atomic Energy Control Board regulations, all operating uranium facilities must submit estimates of their ore reserves to the Uranium Reserve Assessment Group of the Department of Energy, Mines and Resources. The submissions are to be in a form and at times requested by EMR.

REQUIREMENTS

NAME : Explosives Importation Permit	NUMBER : EMR - 2
ACT : Explosives Act	KEY CONTACT : Explosive Branch Inspector - David McCulloch
AGENCY : Energy, Mines & Resources	TIMING : Regular (valid for max. 6 mo. or annually)
MINE TYPES : All	TYPE : Submission
MINE PHASE : Exploration - Operation	STATUS : Regulation
	SIGNIFICANCE : Low
	CROSS REF. :

An application using Form P is required for a General or an Annual Importation Permit.

A General Importation Permit is valid for one importation only and unless revoked sooner is valid for only 6 months. The permit fee is \$1.00.

An Annual Importation Permit is valid for an unlimited number of importations and is valid until December 31st of the year issued unless conceded or suspended sooner. The permit fee is \$1.00.

An Importer's Transmission Schedule (Form Q) is required for all importations.

REQUIREMENTS

NAME : Explosives Transportation Permit	NUMBER : EMR - 3
ACT : Explosives Act	KEY CONTACT : Explosive Branch Inspector-David McCulloch
AGENCY : Energy, Mines & Resources	TIMING : Regular (must be renewed after April 1)
MINE TYPES : All	TYPE : Submission
MINE PHASE : Exploration & Operation	STATUS : Regulation
	SIGNIFICANCE : Low
	CROSS REF :

An application using Form U is required to transport explosives. The Explosives Transportation Permit is valid until April 1st of the year next after the calendar of issue or a lesser period fixed by the Minister. The permit fee is \$1.00.

Requirements for an Explosives Transportation Permit are more fully elaborated in Part VI of the Explosives Act Regulations.

REQUIREMENTS

NAME : Explosives Purchase and
Possession Permits

NUMBER : EMR - 4

ACT : Explosives Act

KEY CONTACT : Not Applicable

AGENCY : Energy, Mines & Resources

TIMING : Regular (Valid
for 90 days)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration & Operation

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

An application using Form W is required for the purchase and possession of explosives. The Purchase and Possession Permit is valid for a period of 90 days from date of issue unless sooner cancelled or suspended. This permit is given by the sales outlet from whom the explosives have been purchased. Contact with Energy, Mines and Resources is not required.

REQUIREMENTS

NAME : Explosives Transportation &
Storage Requirements

ACT : Explosives Act

AGENCY : Energy, Mines & Resources

MINE TYPES : All

MINE PHASE : Exploration & Operation

NUMBER : EMR - 5

KEY CONTACT : Explosive Branch
Chief Inspector-B.P. McHugh

TIMING : Dependent

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

Regulations pursuant to the Explosive Act control the transportation, storage, importation and sale of explosives. These are summarized below.

Part V - Packing For Transportation By Road:

These regulations govern explosive packaging and labelling for road transportation.

Part VI - Transportation By Road and Private Railway:

These regulations govern quantities of explosives, types, labelling, loading and unloading and transportation of explosives.

Part XIII - Amount Of Authorized Explosive that may be kept for use and not for sale in places other than licensed factories and licensed magazines and registered premises and the manner in which it shall be handled and stored

These regulations are applicable to storage of explosives at mine sites and govern the type of structure, types, amounts of explosives to be stored.

REQUIREMENTS

NAME : Ammonium Nitrate
Fuel Oil Order

ACT : Explosives Act

AGENCY : Energy, Mines & Resources

MINE TYPES : Open Pit

MINE PHASE : Operation

NUMBER : EMR - 6

KEY CONTACT : Explosives Branch
Chief Inspector-B.P. McHugh

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Written permission is required for the assembling and blending of ammonium nitrate and fuel oil in open pit mines and quarries. Approval is given for the immediate use of blend. Overnight storage is prohibited.

ACT : The Canada Water Act

DATE : R.S.C. 1970,
c.5 (1st Supp.)

AGENCY : Environment Canada

RELEVANCE : Minor Relevance Only

This Act is to provide for the management of water resources in Canada generally by means of joint Federal-Provincial activities. Under this Act water resource management areas can be established and activities in these areas strictly controlled. This is particularly significant in international or boundary waters where there is a significant national interest. All programs affecting Ontario must be jointly established with the Province.

The statute also gives the Federal government unilateral power in the area of "nutrients".

No person shall manufacture for sale or import into Canada any cleaning agent or water conditioner that contains greater than a prescribed concentration of permissible nutrients. The Governor in Council may make regulations concerning such nutrients. These requirements are directed primarily at commercial cleaners only and to date the only regulations under this Act pertain to phosphorus concentrations (SOR 70-354, SOR 72-416).

There have been no cases under this Act.

ACT : The Clean Air Act

DATE : R.S.C. 1970-71-72
c.47

AGENCY : Environment Canada

RELEVANCE : Air Quality and Control

This Act represents a Federal initiative in the area of ambient air quality and air pollution control. Regulations pursuant to this Act are to set minimum standards and the Ontario regulations are more stringent. Hence this Act has marginal affect on mine licensing.

The Minister may formulate three ranges of air quality:

- (i) tolerable range
- (ii) acceptable range
- (iii) desirable range

The operator of any work if requested by the Minister must submit on a regular basis information enabling an analysis to be made of the nature, quantity and quality of any air emission.

Where the Governor in Council considers the air contaminant as a danger to health or likely to result in violation of an international obligation national emissions may be set.

No operator may contravene a national emission standard.

Where an emission standard exists, no operator shall release an air contaminant where the air contaminant he emits combined with the ambient causes pollutant concentrations over the tolerable limit.

REQUIREMENTS

NAME : Air Quality Requirements

NUMBER : EC - 1

ACT : Clean Air Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals

AGENCY : Environment Canada

Branch

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : Development/Operation

STATUS : Guideline

SIGNIFICANCE : Moderate
Generally Ont. standards more
critical

CROSS REF.: MOE - 2

Guideline standards for acceptable, desirable and tolerable are appended.

SCHEDULE I

Column II		Column III
Contaminants	Concentrations	Range of Quality
1. Sulphur Dioxide	(a) 0 to 30 micrograms per cubic metre annual arithmetic mean (b) 0 to 150 micrograms per cubic metre average concentration over a 24 hour period (c) 0 to 450 micrograms per cubic metre average concentration over a one hour period	Desirable
2. Sulphur Dioxide	(a) 30 to 60 micrograms per cubic metre annual arithmetic mean (b) 150 to 300 micrograms per cubic metre average concentration over a 24 hour period (c) 450 to 900 micrograms per cubic metre average concentration over a one hour period	Acceptable
3. Suspended Particulate Matter	0 to 60 micrograms per cubic metre annual geometric mean	Desirable
4. Suspended Particulate Matter	(a) 60 to 70 micrograms per cubic metre annual geometric mean (b) 0 to 120 micrograms per cubic metre average concentration over a 24 hour period	Acceptable
5. Carbon monoxide	(a) 0 to 6 milligrams per cubic metre average concentration over an 8 hour period (b) 0 to 15 milligrams per cubic metre average concentration over a one hour period	Desirable
6. Carbon Monoxide	(a) 6 to 15 milligrams per cubic metre average concentration over an 8 hour period (b) 15 to 35 milligrams per cubic metre average concentration over a one hour period	Acceptable
7. Oxidants (ozone)	(a) 0 to 30 micrograms per cubic metre average concentration over a 24 hour period (b) 0 to 100 micrograms per cubic metre average concentration over a one hour period	Desirable
8. Oxidants (ozone)	(a) 0 to 30 micrograms per cubic metre annual arithmetic mean (b) 30 to 50 micrograms per cubic metre average concentration over a 24 hour period (c) 100 to 160 micrograms per cubic metre average concentration over a one hour period	Acceptable

SCHEDULE II

Column I	Column II
1. Sulphur dioxide	West-Gaeke Method (Pararosaniline Method) Report No. EPS 1-AP-72-4
2. Suspended particulate matter	High Volume Method Report No. EPS 1-AP-73-2
3. Carbon monoxide	Non-dispersive Infra-red Spectrometry Method Report No. EPS 1-AP-73-1
4. Oxidants (ozone)	Chemiluminescent Method Report No. EPS 1-AP-73-7

SCHEDULE I

Column I	Column II	Column III
Air Contaminants	Concentrations	Range of Quality
1. Sulphur dioxide	300 to 800 micrograms per cubic metre average concentration over a continuous 24 hour period	Tolerable
2. Suspended particulate matter	120 to 400 micrograms per cubic metre average concentration over a continuous 24 hour period	Tolerable
3. Carbon monoxide	15 to 20 milligrams per cubic metre average concentration over a continuous 8 hour period	Tolerable
4. Oxidants (ozone)	160 to 300 micrograms per cubic metre average concentration over a continuous one hour period	Tolerable
5. Nitrogen dioxide	400 to 1,000 micrograms per cubic metre average concentration over a continuous one hour period	Tolerable

SCHEDULE II

Column I	Column II
1. Sulphur dioxide	West-Gaeke Method (Pararosaniline Method) Report No. EPS 1-AP-72-4
2. Suspended particulate matter	High Volume Method Report No. EPS 1-AP-73-2
3. Carbon monoxide	Non-dispersive Infra-red Spectrometry Method Report No. EPS 1-AP-73-1
4. Oxidants (ozone)	Chemiluminescent Method Report No. EPS 1-AP-73-7
5. Nitrogen dioxide	Chemiluminescent Method Report No. EPS 1-AP-74-2

Column I	Column II	Column III
Air Contaminants	Concentrations	Range of Quality
"5. Nitrogen Dioxide	400 to 1,000 micrograms per cubic metre average concentration over a continuous one hour period	Tolerable"
	200 to 300 micrograms per cubic metre average concentration over a continuous 24 hour period	

SCHEDULE I

Column I	Column II	Column III
Air Contaminants	Concentrations	Range of Quality
Nitrogen Dioxide	0 to 60 micrograms per cubic meter annual arithmetic mean	Desirable
	0 to 100 micrograms per cubic meter annual arithmetic mean	Acceptable
	0 to 200 micrograms per cubic meter average concentration over a 24 hour period	
	0 to 400 micrograms per cubic meter average concentration over a one hour period	

SCHEDULE II

Column I	Column II
Nitrogen Dioxide	Chemiluminescent Method Report No. EPS 1-AP-74-2

REQUIREMENTS

NAME : Arsenic Air Regulation

NUMBER : EC - 2

ACT : Clean Air Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

AGENCY : Environment Canada

TIMING : At time requested
(then annually)

MINE TYPES : Arsenic Emitters (Gold,
Silver, Copper, Nickel)

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

Under these regulations (SOR/77-265), the Minister may request information on any metallurgical work, undertaking or business where arsenic releases to the ambient air are anticipated. Information submitted is to be in a standardized format as presented in the regulations.

Submission times for this information depend upon the date of request by the Minister but initially include three months of data and subsequently are to be submitted annually with one year's worth of data.

Arsenic regulations specific to gold mine roasting operations are pending. It is estimated the regulations may be enforced in late 1979.

REQUIREMENTS

NAME : Asbestos Air Regulations

NUMBER : EC - 3

ACT : Clean Air Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

AGENCY : Environment Canada

TIMING : At times requested

MINE TYPES : Asbestos

TYPE : Performance-may require
submission on 6 mo. basis

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. :

The concentration of asbestos fibres contained in gases emitted to the ambient air at a mine or mill from crushings drying or milling operations or from the dry rock storage shall not exceed two asbestos fibres per cm^3 of gas. An asbestos fibre is one longer than five microns with a length to width ratio of at least three to one.

Test methods shall be as per Environment Canada's report EPS 1-AP-75-1 "Standard Reference Methods (or Source Testing Measurement of Emissions of Asbestos from Asbestos Mining and Milling Operations)" December 1976.

Excedences are allowed for brief periods of time as specified for breakdown.

The Minister may require the operator of a mine or mill to take samples in the required manner at regular six month intervals for submission.

REQUIREMENTS

NAME : Asbestos Malfunction or
Breakdown Report

ACT : Clean Air Act

AGENCY : Environment Canada

MINE TYPES : Asbestos

MINE PHASE : Operation

NUMBER : EC - 4

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

TIMING : At times requested

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Usually Low

CROSS REF. :

Two months after a request by the Minister a report on malfunctions or breakdown of the air pollution control equipment or the process equipment associated with operations or storage shall be sent to the Minister. Reporting is to be in standardized form.

REQUIREMENTS

NAME : Asbestos Emission
Measurment Report

ACT : Clean Air Act

AGENCY : Environment Canada

MINE TYPES : Asbestos

MINE PHASE : Operation

NUMBER : EC - 5

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

TIMING : At time requested
(6 mo. & 12 mo. intervals)

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

Where requested, Emission Measurement Reports in standard forms are to be submitted based on previous six months of sampling.

These are to be submitted at intervals of

- (a) six months in respect to milling
- (b) twelve months in respect to crushing, drying and dry rock storage

These intervals are to commence three months after a request by the Minister.

REQUIREMENTS

NAME : Asbestos Report on Controls

NUMBER : EC - 6

ACT : Clean Air Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

AGENCY : Environment Canada

TIMING : At times requested

MINE TYPES : Asbestos

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Usually Low

CROSS REF. :

Two months after a request by the Minister for information on the operation of a mine or mill the information must be forwarded on standardized forms. Further information may need to be submitted at such subsequent times as determined by the Minister.

REQUIREMENTS

NAME : Mercury Air Emissions

NUMBER : EC - 7

ACT : Clean Air Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

AGENCY : Environment Canada

TIMING : At times requested
(then annually)

MINE TYPES : All

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Would not affect
most processes

CROSS REF. :

The Minister may request information on any metallurgical work, undertaking or business where mercury releases to the ambient air are anticipated. Information submitted is to be in a standardized format as presented in the regulations.

Submission times for this information depend upon the date of request by the Minister but initially include three months of data and subsequently are submitted annually with twelve months of data.

ACT : The Environmental Contaminants
Act

DATE : R.S.C. 1974-75-76
c.72

AGENCY : Environment Canada

RELEVANCE : Control of Substances
Affecting Health and
the Environment

The Act is to protect human health and the environment from contaminants.

The Minister may publish a notice requiring persons who import, manufacture or process any designated substance to provide information on quantities of such substances.

Where during a calendar year a person manufactures or imports a chemical compound in excess of 500 kilograms for the first time, he shall within 3 months notify the Minister of the name of the compound, quantity, any information on dangers to health or environment.

The Governor in Council may designate a substance or class of substances to be a contaminant.

No person shall wilfully release a designated substance into the environment in any prescribed geographical area in quantities in excess of those prescribed or under other prescribed conditions.

To date the only regulations under this Act pertain to chlorobiphenyls and mirex.

ACT : Fisheries Act

DATE : R.S.C. 1970, F-14

AGENCY : Environment Canada

RELEVANCE : Alterations and
Discharges to
Watercourses

This is the principal Federal Act affecting the environmental design of a mining project. The Act is relevant to the design of structures within watercourses and the release of deleterious substances to surface waters. There are significant regulations promulgated subsequent to this Act.

Where determined as necessary in the public interest, a fish pass may be required and maintained around any slide, dam or other obstruction. The fish pass must be kept open and supplied with a sufficient supply of water. The Minister may authorize payment of one-half the expense for any fishway. Where construction of a fish pass is not feasible a fee to maintain a fish hatchery may be required.

Where deemed necessary intake structures or channels may be required to include a fish guard or screen. The owner is responsible for all maintenance.

No person shall carry out any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitats.

The unauthorized deposition directly or indirectly of any deleterious substances in any water where fishing is carried on is prohibited. No slash, stumps or other debris can be put on ice or into such waters. Every person carrying out an action likely to deposit deleterious substances in waters or likely to disrupt fish habitat may be required to submit plans, specifications etc. to the Minister. The Minister is empowered to require modifications to or restrict these operations.

REQUIREMENTS

NAME : Disposal of Deleterious
Substance

ACT : Fisheries Act

AGENCY : Environment Canada

MINE TYPES : All Metals (except gold)

MINE PHASE : Operation

NUMBER : EC - 8

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

TIMING : Dependent

TYPE : Performance

STATUS : Regulation

SIGNIFICANCE : High

CROSS REF. : EC - 10

Regulations for metal mines under the Fisheries Act apply only to new, expanded and re-opened mines but exclude gold mines.

The following are classified as deleterious substances.

arsenic	nickel
copper	zinc
lead	total suspended matter
radium - 226	

Subject to the regulations the above deleterious substances may be deposited into water courses if their concentrations are below the following authorized levels

SCHEDULE 1

PART 1

AUTHORIZED LEVELS OF SUBSTANCES

Item	Substance	Column I	Column II	Column III
		Maximum Authorized Monthly Arithmetic Mean Concentration	Maximum Authorized Concentration in a Composite Sample	Maximum Authorized Concentration in a Grab Sample
1.	Arsenic	0.5 mg/l	0.75 mg/l	1.0 mg/l
2.	Copper	0.3 mg/l	0.45 mg/l	0.6 mg/l
3.	Lead	0.2 mg/l	0.3 mg/l	0.4 mg/l
4.	Nickel	0.5 mg/l	0.75 mg/l	1.0 mg/l
5.	Zinc	0.5 mg/l	0.75 mg/l	1.0 mg/l
6.	Total Suspended Matter	25.0 mg/l	37.5 mg/l	50.0 mg/l
7.	Radium 226	10.0 pCi/l	20.0 pCi/l	30.0 pCi/l

NOTE: The concentrations are given as total values with the exception of Radium 226 which is a dissolved value after filtration of the sample through a 3 micron filter.

PART 2

AUTHORIZED LEVELS OF pH

Parameter	Column I	Column II	Column III
	Minimum Authorized Monthly Arithmetic mean pH	Minimum Authorized pH in a Composite Sample	Minimum Authorized pH in a Grab Sample
pH	6.0	5.5	5.0

Sampling and reporting requirements for authorized depositing of deleterious substances are presented in EC - 10.

All facilities must be approved by the Minister.

A major reference document is "Metal Mining Liquid Effluent Regulations and Guidelines" - EPS 1-WP-77-1 and SOR/77-178.

REQUIREMENTS

NAME : Disposal of Deleterious Substances into Tailings Areas	NUMBER : EC - 9
ACT : Fisheries Act	KEY CONTACT : Min. of the Env.- Regional Director & Director - Environmental Approvals Branch
AGENCY : Environment Canada	TIMING : Dependent
MINE TYPES : All Metals (except gold)	TYPE : Submission
MINE PHASE : Operation	STATUS : Regulation
	SIGNIFICANCE : Low
	CROSS REF. :

Any quantity and concentration of deleterious substances can be deposited in tailings impoundment areas that are approved by the Minister. This regulation applies to areas including small ponds or lakes which include fish.

If a tailings area is constructed such that it does not contain within its boundaries any bodies of water frequented by fish no approval is required by the Minister. However effluent from the tailings area would need to meet the criteria.

REQUIREMENTS

NAME : Water Sampling Requirements

NUMBER : EC - 10

ACT : Fisheries Act

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

AGENCY : Environment Canada

TIMING : Regular-monthly reports

MINE TYPES : All Metals (excluding
gold)

TYPE : Performance/Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. : EC - 8

These regulations apply only to new mines.

The following sampling and reporting requirements are necessary for authorization of deposition of deleterious substances.

Sampling Frequency:

The frequency is to be determined from the arithmetic mean of results from the previous six months monitoring as from the following schedule.

DETERMINATION OF FREQUENCY WITH WHICH UNDILUTED
EFFLUENTS ARE TO BE SAMPLED AND ANALYSED FOR
PARTICULAR SUBSTANCES

Item	Substance	Column I	Column II	Column III
		At least Weekly If Concentration Is Equal To Or Greater Than	At Least Every Two Weeks If Concentration Is Equal To Or Greater Than	At Least Monthly If Concentration Is Equal To Or Greater Than
1.	Arsenic	0.5 mg/l	0.2 mg/l	0.10 mg/l
2.	Copper	0.3 mg/l	0.1 mg/l	0.05 mg/l
3.	Lead	0.2 mg/l	0.1 mg/l	0.05 mg/l
4.	Nickel	0.5 mg/l	0.2 mg/l	0.10 mg/l
5.	Zinc	0.5 mg/l	0.2 mg/l	0.10 mg/l
6.	Total Suspended Matter	25 mg/l	20 mg/l	15 mg/l
7.	Radium 226	10.0 pCi/l	5.0 pCi/l	2.5 pCi/l

NOTE: All concentrations given are total values with the exception of Radium 226 which is a dissolved value after filtering the sample through a 3 micron filter. Radium 226 need be measured in only those mines in which there is radioactive ore.

For new mines sampling is every week for the first 6 months of operation.

Sampling for pH shall be

- (1) once a week for the first 6 months
- (2) once a week where for previous 6 months values were less than 5.0
- (3) once every two weeks where for previous 6 months values were between 5.0 and 5.5
- (4) once a month where for previous 6 months values were different than (2) or (3)

Analytical Test Method:

These are regulated.

Flow Measurements:

Flow estimates of undiluted effluent are usually required monthly but can vary after the first 6 months of operation.

Reporting:

Monthly reports in a prescribed manner are to be submitted.

REQUIREMENTS

NAME : Exploration and Development,
Environmental Code of Practice
For Mines
ACT :

NUMBER : EC - 11

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals

AGENCY : Environment Canada

Branch

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : Exploration & Development

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. : EC - 12

EC - 13

Environment Canada has published an "Environmental Code of Practice For Mines" which outlines a number of guidelines for environmentally sound practices. The Code applies specifically to base metal, uranium and iron ore mines but is a good guide for all mine types.

The intent of all regulations should be met during exploration and development activities. Major contaminated flows (greater than 50 gpm or 1/10th of receiving water flow) should be collected and treated.

During active exploration and development dewatering of mine shafts and former pits should be approved by the Ministry. Drilling fluids should be recycled and clarified and stripping, trenching and pit excavation should be minimized. If critical, drilling fluids should be contained and treated.

Water quality sampling of receiving waters should be done seasonally for a period of at least 12 months before development. A desirable period is 24 months or longer.

An overall environmental impact statement should be prepared.

Potential contaminants and acid generation potential should be

determined for ore and waste rock before development.

A monitoring of final effluents for all controlled and significant contaminants should be carried out.

Where exploration or development is abandoned, the site should be reclaimed in a manner to minimize long-term impacts.

REQUIREMENTS

NAME : Operation, Environmental Code
of Practice For Mines

ACT :

AGENCY : Environment Canada

MINE TYPES : All

MINE PHASE : Operation

NUMBER : EC - 12

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals

Branch

TIMING : Dependent

TYPE : Performance

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF.: EC - 11,
EC - 13

Environment Canada has published an "Environmental Code of Practice For Mines" which outlines a number of environmentally sound operating procedures.

In addition to controlled deleterious substances other contaminants should be limited. These include cyanide, mercury and thiosalts (oxidizable sulphur compounds). Limits on these may be forthcoming.

In addition mine operators should take special efforts to limit discharges of

- oil, petrochemicals and other immiscible substances
- ammonia and other nutrients
- sulphates
- ferrous iron and other oxygen demanding substances
- toxic reagents

Other parameters of significance in evaluating effluent quality are:

acidity	iron
alkalinity	magnesium
cadmium	nitrogen

calcium	nitrates
cobalt	nitrites
conductivity	potassium
hardness	sodium
total dissolved solids	sulphate

The code discusses good operation practices for:

Waterborne Wastes: - mill process effluent
 - mine drainage
 - surface drainage including seepage

Minimization of Water Volumes: - reuse of mine water
 - reuse of mill water

Waste Treatment: - tailings impoundment
 - other metal removal systems
 - thiosalt removal

Waste rock and mill tailings disposal

Fail safe design

REQUIREMENTS

NAME : Abandonment, Environmental
Code of Practice For Mines

ACT :

AGENCY : Environment Canada

MINE TYPES : All

MINE PHASE : Abandonment

NUMBER : EC - 13

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

TIMING : Dependent

TYPE : Performance

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. : EC - 11

EC - 12

EC - 8

Site rehabilitation after operation should chemically and physically stabilize the site so effluents remain below the authorized levels in Column I for Authorized Deposit of Deleterious Substances plus having an acute lethality not less than 50% survival in a 96-hour test.

Other good practice approaches are presented concerning sealing of works, tailings pond rehabilitation and topsoil replacement.

REQUIREMENTS

NAME : Lethal Toxicity Metal Mines
Liquid Effluent

ACT :

AGENCY : Environment Canada

MINE TYPES : All metal (except gold)

MINE PHASE : Operation

NUMBER : EC - 14

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals

Branch

TIMING : Dependent

TYPE : Performance/Submission

STATUS : Guideline

SIGNIFICANCE : Likely Moderate

CROSS REF. :

Guidelines have been published for the acute lethal toxicity of liquid effluents from existing metal (excluding gold) mines. These guidelines specify recommended test and reporting procedures for effluents.

It is recommended that the undiluted effluent have a toxicity such that less than 50 percent of all fish tested die within 96 hours.

REQUIREMENTS

NAME : Liquid Effluents From
Existing Mines

NUMBER : EC - 15

ACT :

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals

AGENCY : Environment Canada

Branch
TIMING : Dependent

MINE TYPES : All metal (except gold)

TYPE : Performance

MINE PHASE : Operation

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. :

Guidelines have been published for objectives for liquid effluents from existing metal mines excluding gold. Parameters monitored are the same as in EC - 8 and monitoring frequencies are recommended to follow EC - 10.

A recommended reporting schedule is also given which is similar to EC - 10.

REQUIREMENTS

NAME : Liquid Effluent Regulations
Gold Mines

ACT : Fisheries Act

AGENCY : Environment Canada

MINE TYPES : Gold

MINE PHASE : All

NUMBER : EC - 16 (Pending)

KEY CONTACT : Min. of the Env.-
Regional Director & Director
- Environmental Approvals
Branch

TIMING : Dependent

TYPE : Submission

STATUS : Pending Regulations

SIGNIFICANCE : High

CROSS REF. :

Regulations for liquid effluents from gold mines are currently being drafted and are expected to be published in 1980.

Mining projects in production at the time the regulations are enforced will be required to establish a compliance schedule with Environment Canada.

New projects being developed subsequent to the enforcement of these regulations will be required to meet standards set out in the regulations.

ACT : Canada Wildlife Act

DATE : R.S.C. 1973-74,
c.21

AGENCY : Environment Canada

RELEVANCE : Land Use Limitations
in Wildlife Areas

The Governor in Council may authorize the Minister to purchase, acquire or lease any lands for the purposes of research conservation and interpretation in respect of migratory birds or other wildlife (with provincial agreement).

The Governor in Council may make regulations specifying the use for any purpose of such lands.

REQUIREMENTS

NAME : Uses of Wildlife Areas

NUMBER : EC - 17

ACT : Canada Wildlife Act

KEY CONTACT : Canadian
Wildlife Service - Regional
Director - Ontario Region

AGENCY : Environment Canada

TIMING : Dependent

MINE TYPES : All

TYPE : Performance

MINE PHASE : Exploration/Development

STATUS : Regulation

SIGNIFICANCE : High
Limitation on land use

CROSS REF.:

No person in any national wildlife area (N.W.A.) shall:

- cut remove or wilfully damage any vegetation
- use any boat, aircraft or other vehicle
- carry on any commercial or industrial activity
- disturb or remove any soil, sand, gravel or other material
- dump or deposit any rubbish, waste material or any substance that would degrade the environment

The following are current wildlife areas in Ontario:

Big Creek, N.W.A. - Haldimand - Norfolk Regional Municipality

Eleanor Island, N.W.A. - Township of Muskoka

Mohawk Island, N.W.A. - County of Haldimand

Mississippi Lake, N.W.A. - County of Lanark

St. Clair, N.W.A. - County of Kent

ACT : International River
Improvements Act

DATE : R.S.C. 1970,
c. I-22

AGENCY : Environment Canada

RELEVANCE : Regulates Alterations
to Rivers Flowing
to U.S.A.

"International River" means water flowing from any place in Canada to any place outside of Canada

"International River Improvement" means a dam, obstruction, canal, reservoir or other work which alters the natural flow or alters the use of the international river outside Canada.

No person shall construct, operate or maintain an international river improvement without a valid licence.

This Act does not apply in respect to works constructed, operated or maintained solely for domestic, sanitary or irrigation purposes or other consumptive uses.

There have been no cases under this Act.

REQUIREMENTS

NAME : Construction in International Rivers

NUMBER : EC - 18

ACT : International River Improvements Act

KEY CONTACT : Water Planning & Management Branch, Engineering Branch, Chief - John Bathurst

AGENCY : Environment Canada

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Development

STATUS : Regulation

SIGNIFICANCE : High if applicable to a particular project.

CROSS REF.:

Considerable information and negotiations would be required for a licence for international river improvement. Such licences would normally be granted for hydro electric schemes however could be applicable for major mine related works. Included in an application for a licence are

- details of improvement planned
- effect of the improvement on hydrology
- economic analysis of direct and indirect benefits and costs
- copy of the licence for the project issued by the appropriate provincial authority

An application to have an international river improvement exempted from the Act may be made to the Minister. Exemption may be granted where the Minister is of the opinion

- (a) the work planned has an effect of less than one tenth of a foot on the level or less than ten cubic feet per second of flow at the Canadian boundary, or
- (b) the improvement is of a temporary nature.

ACT : Migratory Birds Convention
Act

DATE : R.S.C. 1970,
c. M-12

AGENCY : Environment Canada

RELEVANCE : Minor Relevance Only -
Affects Habitats

The Act is established to protect migratory birds in Canada and limits many factors not relevant to mining.

The Governor in Council may make such regulations as deemed expedient to protect migratory birds that inhabit Canada during whole or any part of the year.

REQUIREMENTS

NAME : Pollution Deposition

NUMBER : EC - 19

ACT : Migratory Birds Convention
Act

KEY CONTACT : Canadian Wildlife
Service, Regional Director,
Ontario Region

AGENCY : Environment Canada

TIMING : Independent

MINE TYPES : All

TYPE : Performance

MINE PHASE : All (Mainly Development
and Operation)

STATUS : Regulation

ACTION :

SIGNIFICANCE : Low

CROSS REF. :

No person shall deposit or permit the deposit of oil or oil wastes or any other substances harmful to migratory birds in any waters or any area frequented by migratory birds unless such deposition is authorized by regulations under any other Act.

ACT : Export Development Act

DATE: R.S.C. 1970,
c. E-18, and
amendment 1977,
c. 308, (1st
reading)

AGENCY : Export Development
Corporation

RELEVANCE : Facilitation of Trade

The Act originally passed in 1968-69, c. 39 is to facilitate and develop export trade by the provision of insurance, guarantees loans and other financial facilities by setting up the Export Development Corporation.

The Act to amend this Act (1977, c. 308) is specifically formulated to revise Section 23 of the original Act to exclude mining companies from the application of the Export Development Act.

There have been no cases under this Act.

ACT : International Boundary
Waters Treaty Act

DATE : R.S.C. 1970,
c. I-20

AGENCY : Secretary of State for
External Affairs

RELEVANCE : Regulates Interference
of Boundary Waters

Any interference with or diversion from their natural channel of any waters in Canada which in their natural channels would flow across the boundary between Canada and the United States or into boundary waters resulting in any injury on the United States side of the boundary gives the same rights and entitles the injured parties to the same legal remedies as if such injury took place in that part of Canada where such diversion or interference occurs.

No further or other uses or obstructions or diversions whether temporary or permanent of boundary waters affecting the natural level or flow shall be made without authority of both countries. Both countries agreed that neither would permit the construction of any remedial or protective works or any dams or other obstructions to raise the level of waters without approval from the International Joint Commission.

There have been no cases since 1941 under this Act.

REQUIREMENTS

NAME : Boundary Waters
Interference

ACT : International Boundary
Waters Treaty Act

AGENCY : Secretary of State for
External Affairs

MINE TYPES : All

MINE PHASE : Development

NUMBER : EA-1

KEY CONTACT : Ministry of the
Environment, Director-
Environmental Approvals
Branch

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Approval must be obtained from both Canada and the United States for any construction works which affect the natural levels or flows in waters flowing between the two countries.

ACT : Gold Export Act

DATE : R.S.C. 1970,
C. G-5

AGENCY : Department of Finance

RELEVANCE : Gold Export Limitations

Contact with the Department of Finance revealed this act will, most likely, not affect gold exports. The Act has not been used since the early 1930's. As the statute is still Federal legislation a summary is provided.

The Governor in Council may, for any period, prohibit the export from Canada of gold whether in the form of coin or bullion.

The Governor in Council may make such regulations to ensure the carrying out of the provisions and intent of this Act. To date no such regulations have been made.

4.9 DEPARTMENT OF INDIAN AND NORTHERN AFFAIRS

ACT : The Indian Act

DATE : R.S.C. 1970,
c. I-6

AGENCY : Department of Indian
and Northern Affairs

RELEVANCE : Legislates Trespassing and
Mineral Production on Reserve
Lands

This Act is not directly related to mining activities. However certain provisions in the Act limit access to Indian lands and the development of mineral resources from these lands.

A person must obtain approval from the reserve prior to entering the lands or he is guilty of trespassing and liable to a fine not greater than \$50, imprisonment not exceeding one month, or both.

Written permission is required from the Minister to remove from a reserve any minerals, stone, sand, gravel, clay or soil.

The Minister may permit in writing any person for a period not exceeding one year or with the consent of the band council for any longer period to occupy or use a reserve or to reside or otherwise exercise rights on a reserve.

REQUIREMENTS

NAME : Band Approval of Mining Scheme

ACT : Indian Act

AGENCY : Department of Indian and Northern Affairs

MINE TYPES : All

MINE PHASE : Prospecting and Exploration

NUMBER : DINA - 1

KEY CONTACT :

Indian Minerals (Mining)
Manager - S.A. Crandall

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : High Limit on Activities

CROSS REF. :

Specific regulations have been drawn up relating to the surrender of mines and minerals underlying Indian Reserve lands. These regulations are in SOR/68-454 and are in addition to any Provincial requirements.

To acquire a prospecting licence, permit for exploration and development or mining lease on an Indian Reserve, the initial application should be made to the Indian Minerals (Mining) office who will subsequently contact the Indian Band. The mining company must acquire Band approval prior to obtaining necessary permits or licences. Exceptions to this requirement are minerals considered part of the surface such as sand, gravel and clay, which may be sold without a surrender, after agreement negotiated with the Band Council.

Mineral rights are obtained by means of "mineral surrender". It is now standard practice for the mineral surrender to be conditional upon Band Council consent of each development scheme.

Once the mineral surrender procedure is completed the disposal of metallic and non-metallic minerals may be by two methods:

- 1) The most frequently used method is through a negotiated agreement between the Band Council and the mining company. This method provides for a wide variety of terms and conditions by which the mineral rights may be disposed of with licence,

permit or lease. Although standard rates of rental, assessment work and royalty are set out in the regulations, these are subject to negotiations.

The mining company may first present to the Band Council their proposal. The Council may then, by Band Council Resolution, call a general meeting or a referendum to vote on the proposal. Approval requires a majority vote of the Band electors and acceptance by Federal Order in Council.

At the completion of this step the mine proponent will have obtained from the Band approval of his proposal to develop the minerals. He does not have permits to prospect, explore or develop the minerals.

- 2) An alternative and less commonly used method is by public tender. Tenders are invited through advertisement under a set of terms and conditions. Interested companies then submit tenders, the highest of which is issued the licence, permit or lease (all tenders may be rejected if found to be unacceptable).

REQUIREMENTS

NAME : License to Prospect Under the
Indian Mining Regulations

NUMBER : DINA-2

ACT : The Indian Act

KEY CONTACT :

AGENCY : Department of Indian and
Northern Affairs

Indian Minerals (Mining)
Manager - S.A. Crandall

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Prospecting

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

A license may be issued only for lands approved by the Band Council for prospecting. A mineral surrender is not needed as the License to Prospect is not exclusive and does not grant to the licensee any right to minerals which he may find.

REQUIREMENTS

NAME : Exploration and
Development Permits

ACT : Indian Act

AGENCY : Department of Indian and
Northern Affairs

MINE TYPES : All

MINE PHASE : Exploration

NUMBER : DINA - 3

KEY CONTACT :
Indian Minerals (Mining)
Manager - S.A. Crandall

TIMING : Regular (Annual)

TYPE : Submission (Tender)

STATUS : Regualtion

SIGNIFICANCE : High Where
Applicable

CROSS REF. :

It is usual to first obtain an exploration and development permit for a relatively large tract of land prior to obtaining a mining lease. A permit has a term of one year subject to three extensions of one year each, and further extentions where necessary to complete exploratory work, provided the permittee has complied with the terms and conditions of his permit. Although the permit prohibits the production of minerals from the permit area, minerals may be removed for testing.

REQUIREMENTS

NAME : Mining Leases under the Indian Mining Regulations	NUMBER : DINA- 4
ACT : Indian Act	KEY CONTACT : Indian Minerals (Mining) Manager - S.A. Crandall
AGENCY : Department of Indian and Northern Affairs	TIMING :Dependent (Granted for 10 years)
MINE TYPES : All	TYPE : Submission
MINE PHASE : Development, Operation	STATUS : Regulation
	SIGNIFICANCE : High where applicable
	CROSS REF. :

A permittee may select an area to lease from his permit area at any time. The lease is granted for 10 years and may be renewed for additional periods of 10 years providing:

- 1) minerals have been produced from the lease area or
- 2) a mineral deposit has been developed capable of commercial production.

Renewals are subject to the terms and conditions set out in the lease agreement.

Regulation SOR/68-454 specifies rentals, security deposits, royalties and assessments work necessary to retain and obtain extensions to these leases.

REQUIREMENTS

NAME :	Notice of Production under the Indian Mining Regulations	NUMBER :	DINA-5
ACT :	Indian Act	KEY CONTACT :	Indian Minerals (Mining) Manager - S.A. Crandall
AGENCY :	Department of Indian and Northern Affairs	TIMING :	Dependent
MINE TYPES :	All	TYPE :	Submission
MINE PHASE :	Operation	STATUS :	Regulation
		SIGNIFICANCE :	Moderate
		CROSS REF. :	

The Manager of Indian Minerals (Mining) must be notified within 10 days of beginning production. This notification will need to contain supporting information as specified by the Manager.

REQUIREMENTS

NAME : Indian Reserve Waste Disposal Regulations	NUMBER : DINA - 6
ACT : Indian Act	KEY CONTACT : Indian Minerals (Mining) Manager - S.A. Crandall
AGENCY : Department of Indian and Northern Affairs	TIMING : Regular (annual)
MINE TYPES : All	TYPE : Submission
MINE PHASE : Exploration, Development	STATUS : Regulation
	SIGNIFICANCE : Moderate
	CROSS REF. :

Under these regulations (SOR/74-153) "waste" is defined to include garbage, liquid and semi-liquid substances, landfill and scraps of all kinds.

A permit is required to:

- 1) operate a garbage dump
- 2) use any land for the disposal or storage of waste
- 3) burn waste

These permits expire on December 31 next following their issue.

REQUIREMENTS

NAME : Abandonment Requirements under
the Indian Mining Regulations

ACT : Indian Act

AGENCY : Department of Indian and
Northern Affairs

MINE TYPES : All

MINE PHASE : Abandonment

NUMBER : DINA-7

KEY CONTACT :

Indian Minerals (Mining)
Manager - S.A. Crandall

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Low

CROSS REF. :

Upon termination of an Exploration permit or lease the Manager is to be notified and supplied with information on mine workings and mineral content, ancilliary facilities and other information.

REQUIREMENTS

NAME : Permit to Take Sand, Gravel
(on Indian Reserves)

ACT : The Indian Act

AGENCY : Department of Indian
and Northern Affairs

MINE TYPES : All

MINE PHASE : All (Development)

NUMBER : DINA-8

KEY CONTACT :

Indian Minerals (Mining)
Manager - S.A. Crandall

TIMING : Dependent

TYPE : Submission

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF.:

A permit is required to remove sand, gravel and similar non-metallic substances from Indian Lands. Payment will be due for fees and royalty monies. The company will be required to protect the environment during the extraction process and rehabilitate subsequent to removal.

The volume or quality of sand and gravel to be disposed of must be specified in the permit application, as well as:

- 1) location of the permit area, and
- 2) the operational plan.

The document "Guidelines for the administration of non-renewable resources such as sand, gravel, clay ..." provides information on the submission and review of the sand and gravel permit.

Long term and short term permit forms have been developed and presented and explained in these guidelines. Supporting information required for an approval is identified.

ACT : National Parks Act

DATE: R.S.C. 1970,
c. N-13

AGENCY : Department of Indian
and Northern Affairs

RELEVANCE : Land Use in
National Parks

The policy of Parks Canada prohibits the commercial exploration, extraction, or development of natural resources within a National Park.

To date there are only four national parks in Ontario although more are likely in the future. None of these is in an area with significant mineral potential.

4.10 DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

REQUIREMENTS

NAME : Export Permit (Uranium)

NUMBER : DITC-1

ACT : Export and Imports
Permits Act

KEY CONTACT : Office of Special
Import Policy, Export Control
Section, Export Officer

AGENCY : Department of Industry,
Trade and Commerce

TIMING : Regular (Annual)

MINE TYPES : Uranium

TYPE : Submission

MINE PHASE : Operation

STATUS : Regulation

SIGNIFICANCE : Varies

CROSS REF.:

Any exportation of uranium for any purpose must occur only after obtaining an Export Permit from the Department of Industry, Trade and Commerce. Such permits are normally valid for one year.

REQUIREMENTS

NAME : FIRA - Notice

NUMBER : DITC - 2

ACT : Foreign Investment Review Act

KEY CONTACT : Director -
Resource Industries Division

AGENCY : Foreign Investment
Review Agency

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All

STATUS : Regulation

SIGNIFICANCE : Varies - could be
high

CROSS REF. :

Where a notice is required to acquire control of a Canadian business enterprise Schedules I and II are to be submitted.

Where a notice is required to establish a new Canadian business enterprise Schedules I and II are to be submitted.

Where an applicant proposes to acquire a Canadian business enterprise with gross assets less than \$2,000,000 and less than 100 employees as of the last fiscal year, Schedule IV is to be submitted.

Where an applicant proposes to establish a new business in Canada with gross assets less than \$2,000,000 and less than 100 employees during the first two years, Schedule V is to be submitted.

4.11 DEPARTMENT OF NATIONAL HEALTH AND WELFARE

REQUIREMENTS

NAME : Canadian Drinking Water
Standards

ACT :

AGENCY : Department of National
Health and Welfare

MINE TYPES : All

MINE PHASE : All

NUMBER : DNHW-1

KEY CONTACT :

Monitoring and Criteria Div.
Chief - Dr. P. Toft

TIMING : Independent

TYPE : Performance

STATUS : Guideline

SIGNIFICANCE : Moderate

CROSS REF. : MOE Water Quality
Standards

Standards and objectives have been developed for all public, private or individual drinking water supplies in Canada. These are recommended to ensure the continued high quality for drinking water supplies.

Three levels are used:

- objective - long term quality goal
- acceptable limit - not to be exceeded if possible
- maximum permissible limits - maximum standards

The standards and objectives cover:

- physical quality of treated water
- microbiological including pathogens and coliform
- chemical contaminants, toxic and other
- radiological contaminants

Standards are published in "Canadian Drinking Water Standards and Objectives, 1968".

ACT : Canadian Centre for Occupational
Health and Safety Act

DATE : R.S.C. 1977-78,
c. 35, passed
April 17, 1978

AGENCY : Canadian Centre for Occupational
Health and Safety

RELEVANCE : Minor at present, Act sets
out terms for Centre

The Centre will not have a direct affect on mining. However its terms of reference enable it to carry on activities of interest to the mining community.

The objectives of the Centre are:

- (a) to promote health and safety in the work place in Canada
- (b) to facilitate participation by labour and management in the establishment and maintenance of high standards of occupational health and safety
- (c) to assist in the development of policies and programs.

The Centre may:

- (a) promote, assist, initiate and evaluate research
- (b) establish and operate systems and facilities for collecting data.

ACT : The Export Act

DATE : R.S.C. 1970,
c. E-16

AGENCY : Department of Revenue

RELEVANCE : May Provide for Export
on Certain Minerals

Contact with the Department of Revenue revealed that this Act has not been enforced since the early 1900's and is expected not to affect the export of minerals from Canada. Since the Act is currently in effect a summary is provided.

The Governor in Council may by proclamation impose export duties on the following ores and metals:

- (a) on nickel contained in matte, or in the ore or in any crude or partially manufactured state and on copper contained in any matte or ore that also contains nickel, when exported from Canada, as to such nickel and export duty not exceeding ten cents per pound and as to such copper an export duty not exceeding two cents per pound
- (b) on ores that contain copper or any metal other than nickel or lead when exported from Canada an export duty not exceeding fifteen percent of the value of said ores
- (c) on lead ores and on lead and silver ores when exported from Canada to a country that imposes an import duty on lead in bars or in the form of pig iron in excess of the import duty on lead contained in lead ores or in lead and silver ores an export duty, an export duty on the lead contained in the ores so exported from Canada to an amount per pound equal to such excess.

There have been no cases under this Act since 1941.

ACT : The Aeronautics Act

DATE : R.S.C. 1970,
C. A-3

AGENCY : Transport Canada

RELEVANCE : Regulates Aeronautics
in Canada

Under this Act the Minister has the duty to supervise all matters connected with aeronautics and to consider draft and prepare regulations for the control and operation of aeronautics.

Subject to approval by the Governor in Council the Minister may make regulations controlling:

- licensing, inspection and regulation of all aerodomes and air stations
- the conditions under which aircraft can be used
- the height, use and location of building structures and objects including natural objects on lands adjacent to airports (called zoning regulations). These have never been applied to small airstrips.

REQUIREMENTS

NAME : Aeronautics Requirements

NUMBER : TC-1

ACT : Aeronautics Act

KEY CONTACT : Canadian Air
Transportation Admin.
Regional Administrator

AGENCY : Transport Canada

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : All - primarily
Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

An aerodrome is any area.....used in whole or in part for the arrival or departure, movement or servicing of aircraft, while an "airport" is an aerodrome for which an airport licence has been issued by the Minister. Licencing as an airport is not required in all cases but would be where, for example, the aerodrome was used by a base for a commercial air service.

The airport licence will contain conditions relating to the installation, equipment, maintenance, lighting, marking, use and operation of the airport.

Many regulations have been promulgated subsequent to the Aeronautics Act. Some which are relevant to remote airstrips include:

- Air Regulations
- Aerodrome Minimum Lighting Regulations (SOR/69-451)
- Aerodrome Communications Standards and Procedures (SOR/78-53)
- Sparsely Settled Areas (SOR/76-622)

ACT : Navigable Waters Protection
Act

DATE: R.S.C. 1970,
c. N-19

AGENCY: Transport Canada

RELEVANCE : Regulates all Work
Affecting Navigable
Waters

Navigable Waters: includes any body of water created or altered
as a result of the construction of any work.

Work: includes any bridge, boom, dam, wharf, dock,
pier, tunnel, pipe, and any necessary approaches
or appurtenant or any dumping of fill or excava-
tion of materials from the bed of navigable
water or anything affecting navigation.

No work can be done affecting navigable waters unless approved by
the Minister, construction begins within 6 months of approval and
is completed in 3 years and the work is done in accordance with
the Minister's requirements.

The Governor in Council may make regulations necessary concerning
fees payable on application for approval and period of time for
which an approval is valid.

No person shall deposit any sawdust, edgings, slabs, bark or like
rubbish liable to interfere with navigation in any water which is
navigable or flows into a navigable water.

No person shall deposit any stone, gravel, earth, cinders, ashes or
other material or rubbish that is liable to sink into any navigable
water or that flows into any navigable water where there are not at
least 20 fathoms of water at all times.

REQUIREMENTS

NAME : Navigable Waters, Works

NUMBER : TC-2

ACT : Navigable Waters Protection
Act

KEY CONTACT : Aids and Waterways
Regional Manager-R. Wentzell

AGENCY : Transport Canada

TIMING : Dependent

MINE TYPES : All

TYPE : Submission

MINE PHASE : Exploration and
Development

STATUS : Regulation

SIGNIFICANCE : Moderate

CROSS REF. :

Approval is required for any work affecting navigable waters regulated by SOR/70-35. The following regulations must be met:

Buoys and Marks: all works must be marked in an approved manner.

Equipment : all tools, equipment, vehicles, temporary
and structures and parts must be removed at the
Debris completion of the works. Also all debris
on the water surface or bed shall be removed
satisfactorily.

Dams : all dams shall be maintained with the possible
requirement for log chutes. The Minister
must be provided with information on flows,
water elevations and all plans relating to
navigation.

Exploration : all work for the purpose of exploration or
and development of natural resources from the
Development waters must be lighted as specified and provided
with a reliable sound signal as specified. Identification as
specified shall be installed on the work.

The fee for seeking approval of work prior to full compliance with the requirements of the Act is \$500.00.

The fee for seeking approval subsequent to the commencement of construction work is \$1000.00.

4.15 IMPENDING LEGISLATION

ACT : Nuclear Control and
Administration Act

DATE : 1st Reading
November 24, 1977

AGENCY : Nuclear Control Board

RELEVANCE : Replaces Atomic Energy
Control Act

The Act has received first reading and will establish the Nuclear Control Board (NCB) to replace the Atomic Energy Control Board.

Under the proposed Act a "nuclear facility" is defined to include a uranium or thorium mine or mill, and includes all lands, buildings, structures and equipment.

The objectives of the NCB are to regulate the use of nuclear energy to maintain health and safety, and national security while acting as an information source for the public on health, safety and environmental matters.

No person unless exempted by the regulations or a holder of a proper licence from the NCB may;

- (a) explore for, develop, mine, mill, extract or produce a prescribed substance (uranium and thorium).
- (b) construct, operate or decommission a nuclear facility.
- (c) store, dispose of or abandon a prescribed substance or wastes resulting from production.

The NCB may issue a licence to carry out activities prohibited above.

No licence may be issued by the NCB unless site approval has been obtained previously from the NCB and the NCB is satisfied that the applicant has complied with the conditions for site approval. The application for site approval shall be in a form containing such information as considered necessary by the NCB.

To protect health and safety the NCB shall assume responsibility for any prescribed substance or nuclear facility where the substance or facility is abandoned or the circumstances are such that the person cannot reasonably or practically be responsible for them.

The NCB shall hold a public hearing in connection with the issue of a licence to construct a uranium or thorium mine or mill.

The NCB may with the approval of the Governor in Council make regulations:

- (a) governing the design, siting, construction, installation, operation, modification and maintenance of nuclear facilities
- (b) respecting the exploration, development, mining, milling, refining and processing of uranium and thorium
- (c) requiring the keeping of records
- (d) prescribing conditions including evidence of financial responsibility that may be attached to a site approval or licence
- (e) for controlling wastes
- (f) governing the abandonment or disposal of prescribed substances and nuclear facilities
- (g) plus several other areas.

The Governor in Council may make regulations:

- (a) respecting the exploration for, extraction, mining, milling, production, exportation, refining, processing and possession of prescribed substances
- (b) prescribing classes of contracts entered into by corporations requiring approval.

ACT : Uranium and Thorium Mining
Review Act

DATE : June 29, 1978
(1st Reading)
Bill C-64

AGENCY : Energy, Mines and Resources
(Foreign Investment Review Agency)

RELEVANCE : Assessing Benefit to Canada of
Proposed Uranium Extraction

No person shall extract any uranium or thorium in commercial quantities unless he is a holder of an extraction permit.

The Minister may establish the limits of any mining property in respect to which an extraction permit is issued. The permit is in addition to any permits required under the Atomic Energy Control Act.

The permit is issued for a period of five to ten years and may be renewed.

Application for issue or renewal of an extraction permit is to be to Foreign Investment Review Agency (FIRA) and notice shall be also given to Energy, Mines and Resources. Information in the application is to be determined by FIRA. A permit is issued only after review by the Minister (of Energy, Mines and Resources). If the applicant is considered not qualified he may make further representations to attempt to obtain a permit.

If the Minister (EMR) is unable to make an assessment on whether or not the applicant is qualified he may so tell FIRA who will notify the applicant.

If sixty days have elapsed since receipt of the application by the Minister and no notice is sent the Minister is deemed to have authorized the permit.

A company is considered a qualified applicant if numerous conditions are met including:

- (a) shares held by non-residents in Canada are in accordance with regulations (less than 50%)
- (b) at least three-quarters of the directors are Canadians.

Special considerations are given to companies currently operating in Canada.

A company may cease to be qualified for an extraction permit by altering its ownership structure and becoming a non-eligible person under the Foreign Investment Review Act. Such companies may have their extraction permit revoked. They may apply for a new permit.

5. LICENSING SUMMARY

5. LICENSING SUMMARY

Statutes and their subsequent regulations have been summarized in matrix form in the following tables. In these tables, requirements have been classified on two bases:

- (1) General Requirements: These are requirements which do not make specific reference to mine methods or mine types. These would be generally applicable to any mine.
- (2) Mine Related Requirements: These are requirements which make specific reference to mine methods and/or mine types.

Notations in the cells of these matrices classify the relevant requirement in terms of its general significance and mining phases most likely to be affected. However the significance and affected mine phases are highly dependent on site specific conditions and details of particular development schedules.

PROVINCIAL REQUIREMENTS

[illegible]

FEDERAL REQUIREMENTS

[illegible]

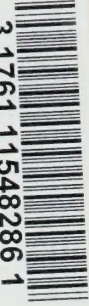
KEY:

L = LOW
M = MEDIUM
H = HIGH
V = VARIABLE

MINE PHASE
X = ALL
P = PROSPECTING
E = EXPLORATION
D = DEVELOPMENT
Op = OPERATION
A = ABANDONMENT

Note: X-Op. denotes that of all phrases affected the statute is particularly significant for operations

1. Uranium or Thorium mines only
2. Gold and Silver mines only
3. Gold mines only



3 1761 11548286 1